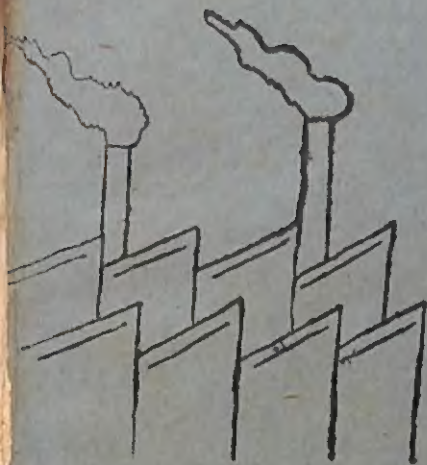
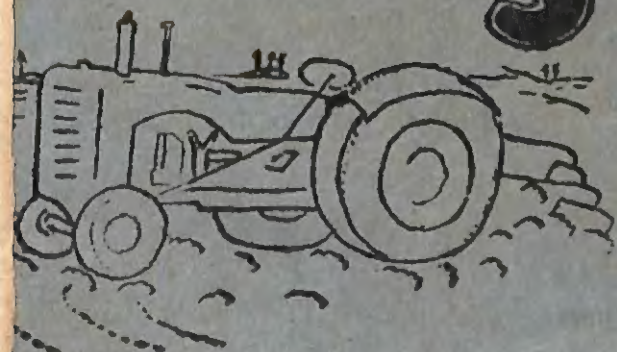


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Teachers'

Quarterly

Foreword

Much has been said in recent years about the various problems of national integration in India, and more specially, about emotional integration.

Relevant extracts from the recommendations of the Committee on Emotional Integration have been sent to the heads of all schools by the Boards of Education in different states. Emphasis has been laid on the correct singing of the National Anthem, proper comprehension and appreciation of the National Anthem and the National Flag, talks to pupils by heads of schools and senior teachers at the daily assembly and terminal gatherings and taking of a pledge by teachers and pupils dedicating themselves to their country and countrymen on the occasion of national days, such as the Republic Day or the Independence Day.

We have also discussed this question with various teachers and educationists and many of us are convinced that the best of human values, including national values and ideals can be developed in the pupils through the curriculum and normal extra-curricular activities of the school, if the institutions are organised for the realisation of the true aims of education, instead of being mainly directed towards the memorisation of facts of information. Education is training for life and it should be so organised as to help man to grow to his full stature. Development of character, inculcation of proper values and training in citizenship are parts of this comprehensive educational ideal.

Children must be given the opportunity to acquaint themselves with all that is beautiful in their country's heritage,—not only in their own cultural group, but also in others who may speak a different language or profess a different religion than their own.

In a social democracy of diverse cultures, as we have in India, the individual must learn to preserve the culture of the group and yet be loyal to the larger whole. In fact he must realise that there is no conflict between the two.

The pupils should leave school with a thorough knowledge of his country's past, its hopes for the future and its present activities, with the capacity to take an active part in them.

It is, by no means, suggested that schools should train pupils to be nationalists in the narrow sense of the term. Inculcation of deep national values would help rather than hinder the growth of broader human values. The study of History, Geography, Social Studies and literature must not be allowed to degenerate into mere cataloguing and memorisation of facts and information, but the human aspect should be emphasised. Pupils will then develop a broad patriotism on a strong psychological foundation that will help them to regard their nation as an integral part of the world community.

NALINI DAS

The principle of reflection must be extended to all problems areas, which seriously threaten democracy.

PSYCHOLOGICAL FOUNDATIONS OF EDUCATION — BIGGE AND HUNT.

PROJECT—STAMP COLLECTION

SULEKHA CHAKRAVARTY,

Gokhale Memorial Girls' School, Calcutta

(I promised Mrs. Karlekar to contribute an article on 'Project Stamp Collection' in details but I am sorry that I couldn't do it earlier. Hope to be excused for the delay).

Project—Stamp Collection.

Class—VI.

Time—One term (i.e. about 3 months).

Actual time—12 periods for lessons, 2 hours for excursion, some time for making the charts and albums, 1 day at the end of the term for exhibition of their work.

This project was taken up in class VI in which, the average age of the pupils is ten years. Stamp collection is a common hobby among the children of this age. So the subject arose naturally out of their interests.

General aim—To make the wide syllabus of History, Geography etc. meaningful and interesting to the children.

Specific aim—

A. Knowledge and understanding: We wanted the children to know the following:—

1. History of the stamps of the world, specially of those of Asia and Europe. Special stress was given on the stamps of India.
2. Information about the history of civilization, religion, geographical features of the countries of Asia and Europe.
3. Information about the postal system and its necessity in modern society.

4. Information about the various types of transport needed for the delivery of letters e.g. sea, land and air.
5. Information about the special issues of the stamps and the historical back-ground of these issues.

B. Habits and skills:—

1. To encourage their hobbies, specially the hobby of collecting stamps.
2. To encourage the habit of working neatly, methodically and independently.
3. To encourage the habit of working in co-operation with others for a common goal.
4. To develop the power of observation, self-control, self-reliance, self-confidence, promptness, responsibility, general knowledge and habit of study.
5. To develop the sense of sharing with others, helping others and working for others.

C. Attitudes and Appreciation:—

1. To have an intensified interest in stamps and in collecting things so that school life and home life are linked up and school life becomes pleasant and happy.
2. To have a friendliness towards all the nations of the world and towards their own country.
3. To develop interest in pen-friendship with the children of remote countries so that they can change their thoughts and learn about their way of life, educational system and culture.

Subjects to be correlated and time required for it—

- (a) Literature and Language—2 periods;
- (b) History—3 periods;
- (c) Geography—3 periods;
- (d) Arithmetic—1 period;
- (e) Social Science—1 period;
- (f) Art—2 periods;

(g) Hand work—(Home work);
 (h) Field trip—Children were taken to the General Post Office to see (a) Philatelic Bureau; (b) Procedures of working of the Post Office.

The following pattern was followed in carrying out this Project—On the first day of discussion was held to introduce the subject. Children were asked to bring their personal stamp albums. Stamps were divided into 3 groups:—

1. Stamps of Asia.
2. Stamps of Europe.
3. Stamps of other countries.

Special stress was given on Asia and Europe.

History—(The history of civilization in Indus valley, Egypt, Mesopotamia).

Geography—Brief description of the continents of Asia and Europe.

Arithmetic—Value of stamps in different countries and their value in Indian coinage.

Social Science—Before taking the pupils to the G.P.O., some general rules of maintaining discipline and order, good manner and behaviour etc. were taught.

Art—Drawing of maps of different countries, making charts to show how news was carried in ancient times.

Literature and Language—Compositions on

(a) The work of the Post Office;

(b) Our visit to the Philatelic Bureau at the G.P.O.;

(c) Autobiography of a stamp.

Hand work—making an album of stamps.

Album consisting of all kinds of letter papers, such as, postcard, envelope, Airletter, Inland letter etc. and also moneyorder forms, telegram forms etc., album consisting of the compositions written by the girls.

General knowledge—History of the origin of the stamps, stamps before and after independence of India, history of the special issues, various means of sending letters from past till present, means of carrying out trade in ancient times and seals used for it, work of the Post Office.

Children collected some information and the teacher helped them. The teacher read out some articles on stamps published in some newspapers or magazines. All the subject-teachers who teach Bengali, History, Geography, Social Studies, Arithmetic and Art etc. helped to carry out the project but the teacher who was in charge of the class (and it was she who taught Bengali, History and Social Science) took the initiative and planned out the details of the Project. An Exhibition of the work done in connection with this project, was held at the end of the term. Children themselves explained everything to the visitors.

EVALUATION

(A Seminar on evaluation was held from the 7th to the 10th January, 1963, in the Education Week Programme of the Institute of Education for Women. The bulk of the work, done in Bengali, will appear in the Sravani Annual. Below are printed some notes in English submitted by the participants.)

A. Evaluation

Evaluation may be defined as assessment of ability and/or attainment. A dictionary will say that evaluation is the determination of relative significance in terms of the same standard. We evaluate when we want to measure the same ability or attainment at the same standard. Assessment of scholastic ability is generally made in numerical terms. Human abilities are difficult to measure because of their complexity, for example, intelligence cannot be measured by anthropological tests. To measure an ability tests have to be taken on the performance of that ability. The teacher who wants to evaluate arithmetical or literary ability will set questions on arithmetic or literature. Binet has given the example of a mining engineer who has to measure the location in order to build a mine.

Several methods of evaluation were discussed by the participants as follows:—

I. *Enumeration or Count Scoring* — This type of marking is the only objective one in the sense that each person's mark is independent of the marker's subjective evaluation of his work, e.g. when a series of simple arithmetic sums is set to answers which are either right or wrong, or one mark is deducted for each mistake in a dictation test, then a pupil's total mark is a count score or enumeration since this method is applicable only to the correctness or incorrectness of the answers which are counted, it is largely restricted to simple kinds of scholastic work. A great majority of Intelligence Tests follow this method so as to eliminate the personal element in scoring.

II. *Ranking* — Ranking means testing a group of pupils in order of their attainment, such as first, second, third etc. This method may be applied to any kind of scholastic work including composition, handwriting etc. It is actually the soundest form of marking in spite of its many limitations.

Its first drawback is that the number of persons who can be ranked is rather small. Even arranging a group of twenty in order involves a great deal of uncertainty, specially near the middle of the list though those at the extremes are usually more readily discriminated from one another.

Secondly, these ranks do not provide a true numerical scale.

Thirdly, these numbers are always relative to the particular set of persons who are ranked.

III. *Qualitative Grading* — Examination scripts and essays are often classified into three to nine/ten grades which are distinguished by letters such as A,B,C or A+,A,A-B+,B,B- and so on: as excellent, very good, good, fairly good, fair, average, below average, poor, very poor etc. Again—first class, second class, third class etc. This is a primitive type of grading because these grades have no numerical measure. They are open to another defect which is not found amongst count scores or ranks:—namely, different teachers often employ widely different scales as standards of grading. Although qualitative grading is supposed to represent absolute evaluation achievement, it has been actually found by experimental investigation to involve such gross discrepancies that neither pupils nor teachers can interpret their significance correctly. This type of marking is actually a relative one like ranking. Instead of there being as many different ranks as there are pupils, here are only 3 to 10 ranks any one of which may be awarded to several pupils whose marks are approximately of equal merit.

B. OBJECTIVES OF TEACHING GEOGRAPHY

I. Class VI—Age 9-12.

The main purposes for which geography may be taught at this stage are:—

- (a) to encourage the pupils to think for themselves;
- (b) to prepare them for some vocations which demand a knowledge of geography;
- (c) to increase their enjoyment of leisure-time occupations such as reading or travel;
- (d) to provide training for world citizenship, or, in other words, create a spirit of international understanding and goodwill. By international understanding is meant feelings of sympathy, tolerance, mutual respect and co-operation which will make the pupils conscious of the ties which unite the peoples of the world and give them the readiness to accept the obligations which an interdependent world imposes.

A definite psychological change takes place in children between nine and twelve years of age. The average child of this age is busy collecting both objects and experiences and begins to use his intelligence in storing and analysing the impressions that he formerly gathered indiscriminately. Concrete facts are classified at this stage but general laws are only dimly perceived. The pupils can understand simple explanations of causes and their appetite for information has developed keenly. They have a strong sense of wonder concerning the magnitude, the diversity and the beauty of the world in which they live.

Around eleven or twelve years of age children often become self-conscious and very sensitive to praise or blame. At this stage they should be encouraged to read independently, as widely as possible, about other parts of the world. The purpose of their lessons should be more strictly geographical, i.e. they should be taught to visualise, from pictures and books, the landscapes and

the modes of life and work in different typical regions of the world and of the journeys of the famous explorers.

All children and many adults have great difficulty in understanding concepts of time and space. With the aid of some calculations and using the local landscape as a measure, children can be given some idea of the immense size of the Earth as a preliminary to studying distant regions in more detail.

II. Class IX-XI—Age 14-17.

These are the years of adolescence in which boys and girls discard much of what was appropriate to childhood. The transition from the purely imaginative to realistic thinking is now more or less complete, but thought is still often confused and cannot yet be called scientific. Young people of this age are capable of a certain amount of abstraction or generalisation. This is the stage for correlation, or the period when the child should be able to use efficiently all tools of the geographer to discover the relationships between the natural and the cultural landscape. This the stage for classification, selection and organisation of material,—for the development of an ordered plan in which relationships can be easily recognised. At this stage, description should be gradually supplemented by explanation. The descriptive material used should continue to appeal to the spirit of adventure and to satisfy the thirst for new experiences.

The objectives of teaching geography at this stage were stated as following —

- (1) Revision of the preceding geography teaching will be needed at this stage partly to refresh and clarify the knowledge of geography acquired in the earlier years and partly as introduction to the more systematic teaching to be undertaken henceforth. One of the most useful programmes for such a course is a survey of the local area

considered not only in itself but as typical of the region in which it is situated. It should also be studied in such a way as to provide the pupils with the vocabulary of geographical terms to be needed in the subsequent years.

- (2) After the local survey, a simple, selective and systematic study of the homeland with emphasis on its world relations should be taken to acquire a minimum knowledge of most parts of the world with particular emphasis on the physical factors which influence settlement patterns, economic factors and the patterns of human existence in different continents such as South America, North America and the European countries. In this way students should be asked to consider more and more complex relationships of social, historical and political influences in addition to the physical and economic aspects.

- (3) Pupils can be encouraged, at this stage, to search for geographical facts related to certain problems rather than to study systematically all the main geographical features of particular regions. This "problem-approach" to geography is particularly important for those pupils who would not be able to continue their studies after the high school level.

C. NEW TYPE QUESTIONS ON SOCIAL STUDIES

I. Objective Type (Multiple Choice).

A few alternative endings have been given to each of the following statements. Tick the one that you consider to be correct :—

- (1) The Government cannot stop blackmarketing because—
- (a) it does not want to.
 - (b) the Indian people are dishonest.
 - (c) the blackmarketers are people in high positions.

(d) the profits from blackmarketing are given to the poor.

(e) the people resort to it out of necessity.

(2) The Independence Day means —

- (a) the day on which we can do whatever we like.
- (b) the day when the British left India.
- (c) the day of the partition of India.
- (d) the day when we framed our own constitution.

(3) Hiu-en-Tsang came to India —

- (a) to study Buddhism.
- (b) to get information about the strength of India.
- (c) as an ambassador of Tai Tsang.
- (d) to visit the birthplace of the great Buddha.
- (e) to preach Buddhism.

(4) A Government is —

- (a) a person.
- (b) the Prime Minister.
- (c) the President.
- (d) the Governor-General.
- (e) a group of persons.
- (f) the state.
- (g) an institution.

II. A thought provoking Question :—

The Chinese attacked India suddenly without declaring war.

China again declared cease fire unilaterally and equally suddenly on the 20th November, 1963.

What is your opinion about China's attitude ?

D. SCIENCE

At first the science group in the Evaluation Seminar had a general discussion regarding the objectives of science teaching in secondary edu-

education. Then the whole syllabus was read and the specific objectives of science teaching in different classes were discussed. The group also discussed ways of evaluating students apart from pen and paper tests and how situations for the achievement of the stated objectives can be created by teachers.

CLASS VI :—

- Objectives :—(1) To help children to love nature.
 (2) To help them to satisfy their curiosity about nature.
 (3) To develop their sense-perceptions.
 (4) To increase their power of observation.
 (5) To develop inquisitiveness in them.
 (6) To arouse scientific interests in them.

In order to attain the above, learning situations can be organised in the following ways—

- (1) Make a flower garden.
- (2) Have excursions and field-trips.
- (3) Hold discussions.
- (4) Let students prepare note books.
- (5) Let them make clay models and charts.
- (6) Let them collect insects, stones, pebbles, etc.

CLASS VII :—

- Objectives :—(1) To give the students some knowledge about nature and science.
 (2) To help them to develop the power of reasoning and increase the ability for generalisation.
 (3) To train their power of classification.
 (4) To arouse sufficient interest in science so that they may take science as their hobby.

These objectives can be fulfilled by :—

- (1) Excursions.
- (2) Suitable classroom demonstrations and questioning during demonstrations.
- (3) Film shows followed by discussions.
- (4) Science clubs in which both teachers and students participate actively.

CLASSES VIII AND IX :—

- Objectives :—(1) To develop creative and inventive faculties in students.
 (2) To give them functional facts.
 (3) To enable them to appreciate the role of science in modern life.
 (4) To develop in them skills in experimentation.
 (5) To develop scientific attitudes and interests in them.
 (6) To enable them to appreciate the role of science in mathematics.
 (7) To increase their skill in solving problems.

In order to achieve these objectives the school should have

- (1) A good laboratory.
- (2) A science library where the students can read the lives of great scientists and their discoveries.
- (3) A class museum where the students would keep their own collections.
- (4) Science Clubs—where the students can satisfy their hobbies by making simple apparatus, etc. These may be exhibited at the end of the year. Besides these, the school should organise occasional excursions to places of scientific interest.

Evaluation of the expected behaviour as manifested in their eagerness to know more, collection

(Continued on page 10)

THE MEANING OF CRAFT

(The following excerpts have been taken from the booklet on "Handicraft Woodwork" published by the Department of Extension Services of Visva Bharati, Binaya Bhawana. The reader will find that the passages quoted below are valuable principles applicable to the teaching of compulsory craft in the higher secondary schools syllabus.)

It would be . . . not fair to say that educational woodcraft does not turn out artisans, as it is not intended to make artisans. The articles are made simply because they have the power of developing the maker, not for the purpose of making articles to be sold in the market.

Craftwork in general is practised for different purposes. Schoolcraft does not mean a trade but the opposite, entirely distinct from trade. An artisan is one who does work in a particular craft for livelihood and who is skilful with his hands . . . Home Crafts in our time have moral values in that they give innocent occupations . . . Then there are artistic crafts which are aesthetic in character but of practical value . . . crafts are practised for different purposes, i.e., craft used for economic reason, craft used for moral purposes and finally craft for educational purposes.

The inclusion of craft in education aims at the harmonious development of man. This can be obtained in two ways. One way is as we consider a regiment of soldiers in harmony when their training has resulted in perfect unison of movement, whereas, the other, an orchestra, is in harmony, although each instrument does not perform movements like those of the others . . .

As the progress towards craft training in education is made, the efforts of the teacher will be more and more directed to the development of the individual. Every pupil has the right of having himself developed in accordance to his own nature.

The aim of teaching craft in school is to give the pupils chiefly a formative education that is to develop their faculties, — mental and physical. The aims are as follows :—

- (i) Instilling a taste for and love of work in general.
- (ii) Inspiring respect for bodily labour.
- (iii) Developing self-reliance.
- (iv) Training in habits of order and exactness.
- (v) Developing habits of attention.
- (vi) Training eyes and developing a sense of form.
- (vii) Acquiring skill or dexterity in using tools for executing good work.

General Principles :—

- (i) One must lay stress not upon the finished product of the work, but upon the exercises involved in the work and its importance in developing the faculties of the pupils.
- (ii) Craftwork must be looked upon by the pupils as something useful.
- (iii) It should afford variety.
- (iv) It should allow independence in thought and action.
- (v) It must correspond to the ability and physical powers of the pupils.
- (vi) The nature of craftwork should be such that the pupils are capable of executing them with exactness.
- (vii) Craftwork of the individual should be carefully supervised and controlled by the teacher.
- (viii) The pupils should be given sufficient scope to develop their thinking power and the article not be executed in a purely mechanical manner.
- (ix) Craftwork should never be detrimental to the health of the pupils.

(Continued on page 10)

(Continued from page 8)

of different kinds of materials, preparation of models, charts, etc., eagerness to handle apparatus, systematic work, tendency to take active part in science clubs, preparation of field notes, practical note books etc., can be done by observing those behaviours. The participants in the seminar arrived at the conclusion that at least 20% of the full marks of the final examination should be kept for assessing the above examples.

Methods of evaluating the academic attainments of students were discussed on the second day of the seminar.

One of the methods is by means of objective type tests. In framing questions of this type, the following points should be kept in mind:—

- (1) The statements should be clear and free from ambiguity.
- (2) Familiar terms should be used.

(Continued from page 9)

- (x) Craftwork should be executed in conformity with the physical development of the pupils and not in harmful postures, and the exertion required in the exercises must be arranged logically.
- (xi) The craftwork should assist in developing the sense of form and beauty.
- (xii) The early stages, woodcraft can be taught by a direct technique, ie, by a series of pure exercises. The reason for

The class room atmosphere should be one of teacher-student joint enquiry, within which genuine problems are developed and solved.

PSYCHOLOGICAL FOUNDATIONS OF EDUCATION—BIGGE AND HUNT.

It ill behoves a nation, which is starting in democratic directions, to maintain in its school rooms non-democratic relationship between teachers and students.

PSYCHOLOGICAL FOUNDATIONS OF EDUCATION—BIGGE AND HUNT.

(3) Answers should not be suggestive.

(4) There must be only one obvious answer to each question.

(5) Questions should be representative of all items and problems covered by the syllabus.

There are various types of objective tests, the most common of which are:—

(1) Multiple choice type.

(2) True-false type.

(3) Completion type.

(4) Association type.

(5) Matching type.

Some tests of the different types were then prepared. The work of framing questions continued on the third day of the seminar and the work done in all three days was corrected and finalised on the fourth day.

doing so is obvious. Original work demands a positive, original mind, sufficient experience of tools, processes and materials, ability to create something new and enough skill to make it. Therefore, to demand originality from the beginner before his experience is adequate is to court disappointment and failure. The pupils should be given good designs and encouraged to modify them before attempting more ambitious jobs.

Psychological Foundation of Education

Morris L. Bigge and Maurice P. Hunt, Harper and Brothers, New York.

This book is a basic text in psychology, focussed upon matters essential to learning and teaching. The authors are inclined towards the cognitive field theory of learning, but other views have also been presented with relevant data and critical discussion.

The primary purpose underlying the book is to help teachers and students of education to evaluate psychological theories from the point of view of their applicability to classroom practices, what exactly do we mean by teaching? How can teaching be made more effective? What is the proper relationship between the teacher and the students? Such fundamental questions, discussed in this volume, have to be faced by all teachers in course of their professional pursuits.

Other problems, that have been raised should be comprehended by society at large or at least by that section of society which leads public opinion. Society supports public education on the assumption that the knowledge gained by the students in the educational institutions will enable them to face life-problems outside the school, in their future life.

How far does such transfer really take place from classroom study to life situations? How can we organize teaching so that its maximum benefits will be available to society in the form of citizens who are better equipped to solve the problems of life?

Finally, the authors have discussed at some length, questions that must be faced squarely by the educationists of all democratic countries of the world today, if democracy and its values are to survive at all. In a democratic society the majority of members must learn to make "reflec-

tive decisions" where "socially important questions are involved." Wise leadership in a true democracy "is a function of wise citizenship". Does our educational system prepare our future citizens for performing these democratic functions adequately? For the successful functioning of democracy it is necessary to raise the level of general intelligence of the common man. How can we do this through our system of public education?

The main body of the volume is divided into four parts dealing with (1) Human Nature (2) Development (3) Learning, and (4) Psychology in the Class Room. The preface discusses some problems of teaching and child study. Different types of relationship between teachers and students in the classroom have been discussed.

According to the authors, democratic groups evince a more friendly and confiding atmosphere, with members showing more initiative and working effectively, even in the absence of the leader, learning and retention are more efficient.

This thesis has been substantiated and developed fully, on the basis of the cognitive-field theory of learning and concrete class room situations, in the third and fourth parts.

The first part of the book examines human nature—biological and sociological. Different theories and various problems of environment and heredity have been discussed critically. A section on elementary statistics is included to enable the teachers to measure intelligence, aptitude, achievements, interests and personality traits of their pupils.

Social adjustment is another important field of

study for the teacher. Adjustment is difficult in modern world with adults subscribing to traditional views and new ideas and values developing rapidly. This creates a conflict and a feeling of insecurity in the adolescent. Rigid and inflexible ideas forbidding critical thought produce further confusion. The authors hope to indicate methods for the better solution of such problems through improvement in the technique of learning and teaching. The second part of the book deals with the different stages and aspects of growth of children.

The physiological and psychological characteristics of the various stages have been discussed fully.

The third part is concerned with the question how do human beings learn? Different theories of learning have been discussed in this connection. The early theories of learning, such as the doctrines of mental discipline, natural unfoldment and operant learning, were all speculative, although the operant learning doctrine is an advance upon older theories. Modern experimental theories can be divided into two broad classes (1) mechanistic stimulus-response and (2) Gestalt field theory. The former is mainly concerned with conditioning. The body machine and regulating it to behave in a particular way, considered to be desirable by the culture. A teacher who accepts the Gestalt field theory, on the other hand, is concerned with problems of personal involvement of the child.

The chapter appears to be rather forbidding with the use of many technical terms like "life space" and "foreign hull", "vector" and "topology" some of them borrowed from geometry and mechanics and new to the average Indian reader. In non-technical language the cognitive-field theory of learning centres on the idea that all psychological activity of a person occurs in a cognitive field. A child in a learning situation is not merely "unconditioned according to nature," nor is he being "passively conditioned." He is "re-structuring" him-

self and his environment, he is "gaining and changing insight."

This "insight" which is the essence of the cognitive-field theory, is the "grasp of a thing" and often goes deeper than words. It lies in "realizing the sense" of a matter, understanding its meaning, "getting the feel" of a thing, "catching on to" or seeing through a situation, (and not in any mechanical process of establishment of connection between stimulus and response).

A teacher, who believes in this theory, regards learning as development of insight and tries to apply this idea to school situations most advantageously. He does not consider himself to be a mere custodian of children, nor a walking-talk machine, whose function is to dictate right answers." The true function of a teacher is to conduct a student-teacher mutual enquiry which fosters maximum insightful growth in the students. The position of the teacher here is something like that of a head-scientist in a laboratory. It is not enough that he should know his subject well. He must gain rapport with the children and sympathetically understand them as persons.

Psychologists have experimented with different methods of learning, such as part learning vs whole-learning, spaced review vs cramming, the place of practice and over learning.

The authors of this book are positive that, repetition per se does not result in learning. To be efficient, practice must be experimental and accompanied by a questioning attitude. We perfect our thought patterns by trying them out.

"How is psychology used in the classroom"?—This is the basic problem of the fourth part. According to the authors, American education is a mixture of teacher dominated drill of informative material and, relatively undirected project-work. The influence of Dewey and the "Progressive Education Movement" has resulted in greater activity in the classroom, freedom from excessive restraint

and more emphasis on intelligence. Yet, old practices, based on mechanical memory-work, tend to persist.

In the opinion of the authors, the ability to solve problems according to principles of scientific reflection is the most useful intellectual tool a person can possess and should, therefore, be carefully fostered in our schools.

Reflection-level teaching requires more active participation by students and a more critical approach, genuine problems—whether personal or, societal—must be placed before them.

Projects and units should be problem-centred, so that the students have to reflect, study and discuss and there is an intelligent interplay of ideas. Experiments have shown that these students do

not possess less factual knowledge of basic subjects than those taught by traditional methods.

What is the role of the teacher in such a classroom? The authoritarian classroom is dominated by a text book, the procedure is recitational and arbitrary decisions have to be made by the teacher. In the democratic set up, on the other hand, the students have full freedom of thought and opinion. Contrary ideas are not forbidden or ridiculed. Free communication of thought and development of group feeling is emphasised, leading to group divisions. The teacher is the democratic leader and an instigator of thought. He arouses the desire to think in the students and helps them to select learning experiences, capable of making effective citizens of them.

NALINI DAS

A teacher who gives his students pat answers which are not to be questioned, is not serving the cause of intelligence.

PSYCHOLOGICAL FOUNDATIONS OF EDUCATION—BIGGE AND HUNT.

SCIENCE FAIR

A Science Fair was organised at the Institute of Education for Women, Hastings House, Alipore on the 2nd February, 1963. Sakhawat Memorial Girls' School, Multipurpose Govt. Girls' School and Bethune School participated in the exhibition, besides these three schools, students from four other schools, viz., Sarada Ashram Balika Vidyalaya, R. C. Mitter Girls' High School, Gokhale Memorial Girls' School and Chetla Girls' School visited the exhibition. It is a great pity that in spite of earnest requests only such a few schools offered exhibits or took an interest by coming over to see them.

However, we were very lucky to get Dr. U. P. Basu, Director, Bengal Immunity Research Institute and Dr. K. Mitra, Director, J. C. Bose, National Science Talent Search Scheme as the President and the Judge respectively. Both of them took keen interest in the pupils' work. The exhibits made by the little girls were really praiseworthy.

On behalf of the Central Science Club five prizes of Rs. 5/- only each (in Prize Bonds) were announced to be awarded to the best three students of the three schools and also a running shield was introduced for the school which produced the best exhibits. Sakhawat Memorial Girls' School was declared winner of the shield.

Both Dr. Basu and Dr. Mitra spoke about how best the students should utilize their senses to be-

come scientists. Mrs. Das, Principal, Institute of Education for Women in her address stressed the need of pursuing such hobbies, so that the little girls of to-day might in future become great scientists like Mm. Curie. She hoped that the next year more schools would join us here with their exhibits.

Here mention must be made of two girls who gave interesting talks on popular scientific topics. The function ended with a vote of thanks and a film-show.

The Science Fair was enjoyed and its value appreciated by those who attended it.

Names of the girls who were judged first in each of the schools :—

- (1) Aparna Banerjee of Sakhawat Memorial Govt. Girls' School.
- (2) Sutapa Mitra of Govt. Girls' M. P. H. S. School, Alipur.
- (3) Anita Manna of Bethune Collegiate School.

Names of the girls who gave the most interesting talks :—

- (1) Rama Guha, Sakhawat Memorial Govt. Girls' School.
- (2) Ratna Bal of Govt. Girls, M. P. H. S. School, Alipur.

A teacher's success in inducing reflective learning hinges upon his ability to bring students to be involved in issues and yet be curious and open-minded in regard to their solutions.

GENERAL SENCE

(Curriculum Guide—Classes VII—X)

Prepared by participants in a workshop for Science Teachers
held in the Pujah Vacation

Class—VII

Expt. No.	Content	Material reqd.	Experimental Procedure A	Concepts to be developed.
1. (i) Air		A narrow-necked bottle. A pot full of water. A handful of soil. Brick. A glass of water.	Plunge the bottle, mouth down into a jar of water. A handful of soil is given in a container of water—observe. A Brick is placed in a container of water—observe. Fill a glass with water & observe it closely, let the glass stand in a warm place for several hours, observe again. What difference do you see. Is there any evidence that water contains air ?	1. Air is found everywhere.
2. (i)		Funnel. Bottle. Water. Clay.	Place a funnel on the mouth of a bottle. Fill the space around the funnel with modelling clay. Pour water into the funnel slowly. Then the funnel becomes full of water. Punch a hole through the medelling clay—observe.	2. Air takes up space.
(ii)		A glass, a glass jar half full of water, a piece of cork.	Float a cork on a glass jar half tull of water, lower a drinking, glass mouth down-ward over the cork,—observe. Wedge a piece of paper tightly into the bottom of the glass and repeat—observe whether the paper gets wet.	
3.		A light wooden rod about five feet long. A nail. An upright wooden support. A small pail. A basket ball. A pump	A small hole will be cut through the centre of the wooden rod, a nail will be put through this and it will be driven in to support the rod which must turn very easily on the nail. At one end of the rod will be a small pail with two thumb tacks, at the other end, a pumped out basket ball. This must be balanced by pouring sand in the pail. The ball is then filled with air and it is blanced, the ball will be heavier than before.	3. Air has weight.

TEACHERS' QUARTERLY

4. Air

A candle, a dish, a glass jar, water.

A candle is fastened to the bottom of a dish. Some water is added and the candle is lighted. Then it is covered with a jar. When the light of the candle disappears, water of the dish occupies $\frac{1}{4}$ th of the jar. The rest gas is tested with a lighted stick.

4. Air contains $\frac{1}{5}$ th volume of oxygen and $\frac{4}{5}$ th volume of inactive gas.
5.

A dish, lime water.

A shallow dish with lime water is exposed to air for some time and is observed.

5. Air contains CO_2 gas.
6.

A glass, some ice pieces.

A glass is kept in air with some ice pieces in it. After sometime the surface of the glass is observed.

6. Air contains water vapour.
7.

A plant, a test tube, a weighted wooden block, a jar, limewater.

A plant is placed in a test tube held in a weighted wooden block. It is put in a bowl containing lime water and the plant is covered with a jar. It is kept in a dark place for several hours. The lime water will be milky showing that CO_2 was given off, and the rise in the level shows that a considerable amount of oxygen was taken in.

7. Living objects take oxygen and give off CO_2 gas.
8.

A bell jar, cork, "Y" shaped glass tube. Two rubber balloons. A sheet of rubber string.

A bell jar is taken, a cork is fitted to the neck with a tube in it. A rubber balloon is tied to each of the lower limbs of the Y. A sheet of rubber is tied round the bottom of the jar, with a piece of string knotted through a hole and sealed with wax. Pulling and pressing the diaphragm downwards and upwards observe the apparatus.

8. Through respiration air is taken into the lungs.
9.

A wood box with a pane of glass to make a tight window. Corks, candles.

A wood or pasteboard box with a pane of glass to make a tight window and four holes in each end, two above and two below will be used. Solid corks will be placed in all the openings including the two on the top for the lamp chimneys. Four candles will be placed in the box. All the windows will be closed and the candle will be observed. Then one window at top will be opened and the window at bottom. Both windows at the top will be opened; next time both windows at the bottom will be opened. Thus different combinations of openings will be tried and will be observed.

9. Hot air passes outside through the upward openings and cold air enters into the downward openings.

10.

A sheet of heavy paper seven inches square. A blade. A Nail. A light wooden rod.

A sheet of heavy paper seven inches square is cut out. Two lines joining the opposite corners are drawn. The paper is cut out along the lines to within an inch and half of the centre. Every other corner of the sheet is bent over to the center. So that the points all lay over the centre. A nail is pressed through the center. The nail is forced into the wood just far enough to hold it securely. Now it is blown into the face of the wheel and is observed.

10. Air develops force, does work.

B

1

1. Meat
2. Potato
3. Wood
4. Mud
5. A glass of iced water
6. Spirit lamp
7. Basin
8. Pressing instrument.

Expt:—

- (a) Heat a piece of meat
- (b) Press a piece of potato
- (c) Burn a piece of wood
- (d) A glass of iced water is kept in the air
- (e) Press some amount of mud.

1. Water is everywhere.

2

1. Test tubes
2. Copper sulphate
3. Salt
4. Sugar
5. Powder chalk
6. Iron filings
7. Potassium Nitrate
8. Funnel & stand
9. Filter paper.

Expt:—

Take some portion of all the substances, into the test tubes and add some water to them. Thoroughly shake all the test tubes. Allow some time. Then filter all the solution.

2. Substances dissolve in water. Some quickly some slowly and some do not.

3.

1. Black board
2. Water
3. Piece of cloth
4. Kettle
5. Boiler.

Expt:—

(a) Moisten the black board with water by rubbing a wet cloth over it.
(b) Set a tea kettle boiling and notice the cloud of water particles coming from the spout.

3. Water is present in the air.

4.

1. Glass jar with lid.
2. Cracked ice & water.
3. Sheet of blotting paper.

Expt:—

Fill a jar with cracked ice and water, clamp the lid. Wipe the outside thoroughly dry and sit it on a sheet of blotting paper.

4. Water is collected from the air.

5.

1. A stove
2. Tea kettle
3. Tray with cracked ice
4. A tray of plant seedlings.

Expt:—

Set the water boiling. As steam emerges from the spout it will rise to the cold surface of the tray, condense into cloud, form drops, and fall to the seedlings as cool refreshing rain.

5. Study of the rain cycle.

6. Water

1. Dirty water
2. Funnel and stand
3. Filter paper.
4. Lamp chimney
5. Cork
6. Glass tube
7. Charcoal
8. Fine sand
9. Coarse sand
10. Coarse gravel.

Expt:—

(a) Make an arrangement for filtration by the sand, funnel and with the filter paper. Pour down the muddy water into the funnel. Collect clear water from the stem of the funnel.

(b) Fit a stopper and a short piece of glass tube at the small end of the chimney. Put in the bottom a first depth of about two inches of coarse gravel, and next two inches of fine sand. Finally add half inch of charcoal. Pour down the muddy water at the top.

6. Water is purified by filtration.

7.

1. Tea kettle
2. Cork
3. Bent tube
4. Glass jar
5. Boiler
6. Cold water pot

Expt:—

Fit a stopper and bent glass tube to the spout of the kettle. Have the arm of the tube long enough so it will reach from the spout to the bottom of a jar, when the kettle is on the boiler. Have the glass jar sitting well down in cold water. Introduce into the kettle a quantity of very dirty black water. Start it boiling. Soon steam will pass over into the cold jar and condense back to liquid.

7. Water is purified by distillation.

8.

1. Small dish
2. Concentrated solution of iodine or carbolic acid.
3. Egg.
4. Glass rod.

Expt:—

Select a very small dish and pour into it about a teaspoonful of concentrated chemical such as iodine, lysol, or carbolic acid. Add to the chemical a few drops of egg in a single spot. Now agitate the egg white, just a bit with a glass rod, so as to bring it into contact with the chemicals. Continue this until the egg has completely coagulated into a tough white mass.

8. Chemicals are used to sterilise water.

9

1. Tea spoon
2. Epsom salt
3. Small amount of water.
4. Soap solution
5. Glass jar.

Dissolve a teaspoonful of Epsom salt in a small amount of water and add this to half a jar of water. This is hard water. Now slowly pour into the hard water about two teaspoonfuls of soap solution. The soap has been changed into a curdy insoluble white substance that has no clearing value.

9. Action of hard water on soap.

10.

1. Two pieces of dirty cloth.
2. Soap solution
3. Epsom salt
4. Thermometer

Expt:—

Put four tablespoonfuls of soap solution in ordinary water. Wash one piece of dirty cloth until, it is clean. Then make a similar test with hard

10. Difference in the cleaning effect of hard water and soft water.

11. Softening of the hard water.

5. Two Glass jars.

water as follows. A teaspoonful of Epsom salt is added to the water. Now add to this four tablespoonful of soap-solution. Proceed to wash the other dirty cloth by giving it just as near the same treatment as was given the former one. The water must be practically the same temperature, do just as nearly as possible same amount of scrubbing.

Expt:—

Prepare hard water by adding Epsom salt into the water. Next dissolve not less than five teaspoonfuls of washing soda in a small drinking glass of water. Now the half-jar of hard water and a clear solution of washing soda are mixed together. Allow to stand overnight. Drain off some clear water and add a small amount of soap solution. There is no curdy insoluble substances.

11. Water.

1. Epsom salt.
2. Washing soda.
3. Soap solution
4. Warm water.
5. Teaspoon.

C

1. "Things we want to find out about plants". We use things made from plants.
 1. Green vegetables.
 2. Cereal
 3. A piece of wood
 4. A piece of paper
 5. A picture of animal's feast
 6. Wood furniture
 7. Cotton
 8. A chart

"From plant to you".

1. Talk about the different kinds of familar things made from plants With the help of students find out how they are used as food, clothing etc.
2. Ask the students to make a chart like "From plant to you."
3. Thread from plants. Take a piece of fluffy cotton. Pull away a little bit and begin twisting it into a thread. Keep pulling and twisting to see how thin and smooth a thread you can spin.

People and many animals in all parts of the world use plants. Different parts of the plants are used in many ways. Our food, clothing materials, furniture, paper come from plants. Animals also live on eating plants.

2. Different organs of a plant.

3. "

1. The plant body of a flowering plant
2. Cuttings of different parts of a flowering plant.

1. Examine the flowering plant body and name the different organs.
2. Ask the students to rearrange the different parts of the plant body and to label them.

The root, stem, leaves, fruit and flower are different organs of a plant.

4. Germination of gram seed.

1. A few grams
2. A tumbler
3. Blotting paper
4. 3 pins
5. Water.

1. Germinate seeds in a tumbler. They are held against the inside of the glass by a roll of blotting paper, and a little water in the bottom of the tumbler keeps them moist.

A seed contains a baby plant, if we give it soil, sunlight water and air, it will grow into a parent plant which will make more seeds.

5. Conditions for germination.

1. Gram seeds
2. Durofix

Choose some dry gram seeds and cover their micropyles with a little

Suitable temperature, plenty of moisture, air

TEACHERS' QUARTERLY

3. Two vessels.
4. Water
5. Two saucers
6. Blotting paper
7. A box.

rubber solution. Allow this to dry and then place the seeds in water. Put some more gram seeds which have not been treated thus in another vessel of water. Leave both for the same length of time (about twenty-four hours) then see to what extent the seeds have swollen by the absorption of water.

and light are essential for germination.

6.

2. Place a piece of blotting paper in a saucer. Then moisten it with a known quantity of water. On this blotting paper sow gram-seeds. Do the same, using a similar sized piece of blotting paper and the same amount of water, with different seeds. Place one set in the light and another set in a dark room or box.

Record the results and from them discuss the effect of light on germination.

3. Test the effect of different temperatures on seeds, by similar methods.

7. Root

1. A grass root
2. Gram root.

1. Examine the root of a gram seedling and note the primary roots.

Root system such as tap root and fibrous root.

2. Examine the roots of grams which develop from any part of the plant. Note that the primary root ceases to grow and a large number of roots develop from the neighbouring region.

3. Draw and describe the typical root systems.

8. Functions of root.

1. A small planted tree in a tub
2. Two plants of same size
3. Plastic cover
4. Two tubes with soil
5. Water.

1. Examine the root of the plant. By digging the soil show that the root anchors the plant in the ground.

1. The root anchors the plant in the ground.

2. Get two plants of the same kind and size, cover the soil around one plant with plastic sheet. Sprinkle water on the leaves of this plant, sprinkle water on the soil of the other plant. Note the dried plant and the fresh plant.

2. It spreads through the soil and absorbs water and soil minerals.

3. Uproot a complete dandelion plant and wash the soil from the root. Then stand the roots in a jar containing water coloured

3. It conducts these to the stem for delivery to the leaves.

with red ink. After a few hours note that the leaf veins are coloured red. Cut slices across root and stem, using a razor blade, and supply a slice of each kind to every pupil. Examine with a lens, and notice that whereas the root sections are stained red at the center, the stem sections have a ring of red near the outer edge.

- | | | | |
|----------------------|--|--|--|
| 9. Function of root. | 1. A plant
2. Two Jam bottles
3. Water
4. Plastiklay. | 1. Support a groundsel plant in the neck of a jam bottle with its roots dipping into water in the bottle and its shoot protruding above the bottle. Plug the neck of the bottle round the stem of the plant with plastiklay and mark the height of the water in the bottle. Set up a similar bottle containing water to the same marked level. There is no plant in this "control" bottle, but the neck is plugged with plastiklay. The water level in the first bottle, but not in the second slowly falls. | Root takes up water. |
| 10. | 1. Carrot
2. Beet
3. Turnip
4. Radish. | 1. Examine the modified roots of Radish, Beet, Turnip and Carrot.
2. Draw sketches in each of the above cases.
3. Choose small sized roots of the above cases. Dust with talc and press in half its thickness into a rolled out slab of plastiklay. Extract the root carefully and paint the plastiklay mould with olive oil or vaseline. Mix plaster of Paris with water to make a thick cream, and run this into mould, which should stand in a shallow card or paper box. | Roots are storage organs |
| 11. Forms of stem. | 1. The stem of sunflower
2. The twig of china rose. | 1. Examine the stem of sunflower and note the soft, rigid and erect stem. The places where the leaves are attached are nodes and the spaces in between are called internodes. The angles between the upper part of the stem and the leaves are called axiles of the leaves. | The stems of different plants are different. |

12. Functions of stem.
- Two similar plants.
 - Examine the twig of china rose, note the brown and hard stem.
 - Draw sketches in each of the above cases.
- The stem produces the leaves and displays them to the light.
- 13.
- A stem of a Dopati plant
 - A jar containing water coloured with red ink
 - A blade.
 - Note the position of leaves in the plant.
 - Take two similar plants, keep one plant inside a semi-dark room and another, outside the room. After a few days note the stem of the plant inside the room and the other outside the room.
 - Choose a Dopati stem. Then stand the stem in a jar containing water coloured with red ink. Cut slices across the stem, using razor blade, and supply a slice to every pupil.
 - Draw sketches of the stem and the slice.
- The stem is a busy thoroughfare for it conducts water and minerals upward and carries foods that have been manufactured in the leaves, downward.
- 14.
- Potato
 - Iodine solution
 - A blade
 - A cactus plant
 - A tub full of sand.
 - Take a potato. Cut it in the middle. Then to the white side of potato add a little sol. of iodine. Then note the change of colour of the white part of the potato due to presence of starch.
 - Take a cactus tree and keep its root inside a sand tub. After a few days, note the fresh cactus.
- Like the root, the stem often serves as a place of food storage.
- 15.
- A cactus plant (phanimanasa)
 - Plastiklay
 - Plaster of paris
 - Water.
 - Examine the green flattened stem of phanimanasa. Note the leaves modified into spines.
 - Make a model of phanimanasa with plastiklay and plaster of paris.
 - Draw sketches of phanimanasa.
- In many plants green stems aid the leaves in food manufacture. They serve the function of leaves which are modified into spines.
- 16.
- A pea plant
 - A support for climbing.
 - Examine the thin, wiry and leafless branch of pea plant.
 - Examine the tendrils which develop from the tips of leaves.
 - Draw the sketches of the above.
- The tendrils, the modified stems serve as a means of grasping a support and holding the stem securely. They help the stem in climbing.
- 17.
- A lemon stem with thorn
 - A bael stem with thorn
 - Card
 - Cellotape
 - Examine the thorns of lemon stem and the bael stem in the axiles of leaves.
 - Examine the sharp edges of the thorns which injure skin.
 - Collect the twigs. Mount them
- The stem as self protector. The stems are modified to form sharp thorns which protect the plant from browsing animals.

5. Plaster of Paris on card by means of narrow strip of cellotape.
6. Plastiklay.

4. Make plaster cast of twigs.
5. Draw sketches of the twigs.

18.

1. A plant of onion
2. A plant of rajani-gandha.

1. Examine the bud i.e. the underground stem of onion and rajani-gandha.
2. After dissection of the bulb sketch the bud.
3. Keep the bulb under the land after a few days note what happens.

The stem helps reproduction.

D

1. Insects.

1. A picture of house fly and mosquito
2. A picture of a plate of sweets with fly on it

1. Talk about different insects.
2. Talk about different diseases carried by insects.
3. Examine different pictures of different insects.

Many insects are our enemies. The flies, mosquitoes do great harm to man and his activities. They are carriers of diseases.

The germs of malaria cholera are carried by house fly and mosquitoes. So we must know the life history of these insects to prevent diseases.

2. How to recognize an insect.

1. A picture of an insect

1. Examine the different parts of an insect.

Insects include that division of the arthropodes which have three separate body regions, (1) a head (2) a thorax (3) an abdomen. They also have a pair of antennae, three pairs of legs, usually two pairs of wings, and a breathing tube called tracheae.

3. The housefly.

1. The picture of a house fly
2. The enlarged picture of the foot of the housefly
3. The model of a housefly

1. Examine the different parts of the body of the house fly in the model and in the picture.
2. Draw pictures of different parts of it and name them.
3. Make a model of housefly by plastiklay.
4. Take some sweets and notice that the care with which the fly cleans its feet by constantly rubbing them against each other and its body.

The housefly is a two winged insect. It has large compound eyes, short fleshy antennae, and a club shaped sucking tube. Its wings are well developed and operate at high speed due to the powerful muscles of the thorax. The six legs are well developed and the feet have claws and sticky hairs which aid in locomotion. Unless these hairtips are free from dust, they will not stick well.

4. House fly, stages of complete metamorphosis.

1. A chart of the stages of complete metamorphosis
2. A model and a picture of the stages of complete metamorphosis
3. Plastiklay
4. Wire
5. Cellophane paper
6. Board

1. Talk about the different stages of complete metamorphosis.
2. Examine the different stages in the chart and in the model.
3. Ask the students to draw and to make models of the different stages.

Stages of complete metamorphosis.

Egg: Deposited near source of food. Period of increase in number.

Larva: Period of eating and growth: maggot.

Pupa: Period of quiet, internal transformation.

Adult: Reproductive stage.

The eggs are deposited in horse manure or in similar matter, the female laying from one to two hundred eggs. They hatch in one day into the larval form called maggots. After eating and growing for five or six days, the larvae pass into pupal condition, inside the last larval skin, which thus takes the place of a cocoon. From this stage, adults emerge in about a week. The whole development from egg to adult takes about two weeks.

Class-VIII

No. Expt.	Content	Materials used	Experimental Procedure	Concept to be developed.
1.	Magnets	A magnet, a nail which is made of iron	Magnet can pick up things. Magnet can pick up the nail without touching. But we can not pick up the nail without touching. Only magnet can pick up the nail.	Magnets can pull some things without touching them.
2.	Magnetic power	A magnet, a piece of wood, a piece of glass and a piece of iron	Magnet can pull some things. But magnet can not pull wood and glass. So you will find that magnet pulls the iron. Magnet can pull those things which are made of iron.	Magnets can pull the things that are made of iron.
3.	Preparation of Magnet	A magnet, a nail	Rub the nail by one of the magnets. Rub in one way, not back and forth. Then this nail will be magnetized. This magnetized nail is now magnet. Now this nail can pick up things made of iron.	Magnets can be used to make new magnets.

- | | | | |
|------------------------------------|--|---|---|
| 4. Artificial magnet | Horse-shoe shaped and bar-shaped magnet | <p>Artificial magnets are manufactured in various forms, but they are commonly bar shaped, horse-shoe shaped. They are usually made of special steel alloys that have unusual magnetic properties. These alloys are made by melting together iron, carbon, and small quantities of one or two other metals besides iron.</p> <p>Artificial magnets are either temporary or permanent magnets. Temporary magnets are easily demagnetized. Such magnets are commonly made of soft iron. Permanent magnets are not easily magnetized, but they retain their magnetism to a great extent.</p> | <p>Artificial magnets are of various forms-bar-shaped, horse-shoe, shaped. They are usually made of soft iron.</p> |
| 5. Magnetic poles | A piece of paper, iron filings, a bar magnet | <p>Pour iron filings on a sheet of paper and rub a bar magnet in the filings. The filings collect mostly near the the two ends of the magnet. Where the filings are the thickest are the magnet's poles.</p> | <p>Magnets always have two poles.</p> |
| 6. Magnetic lines, magnetic fields | A sheaf of iron filings a bar magnet | <p>Pour iron filings on a sheet of paper and place the bar magnet on this paper. Observe the way in which the iron filings are arranged at the poles. It will be found that they string out from the poles in all directions in lines that tend to curve. The filings are following the magnetic lines of force. These lines curve between the magnetic poles. Every magnet is completely surrounded by invisible lines of force. All the magnetic lines of force together make up the magnetic field of the magnet.</p> | <p>Iron filings sprinkled on a sheet of paper above a bar magnet to indicate magnets magnetic lines and magnetic field.</p> |
| 7. Magnetic induction. | A magnet, a piece of paper and iron filings | <p>Dip a magnet into iron filings, the filings stick to it or to other filings. The filings are magnetized by induction. By induction, the filings are attached with each other.</p> | <p>The iron filings magnetized by induction is only a temporary magnet. If removed from the vicinity of the magnet, it immediately loses most of its magnetism.</p> |
| | | <p>Make a circle about 2 inches across on the paper. The exact size doesn't matter. Cut out the circle. Make a tiny hole in the centre and push the snap fastener into it.</p> | <p>A magnetic compass is a useful navigation instrument because it always points towards the north magnetic pole.</p> |

- 8 Magnetic compass for navigator and surveyor
- A piece of paper, three needles, a spool, a pencil, a magnet and half of snap fastener

Magnetize two needles by "Combining" each needle with a pole of the magnet, that is, don't rub back and forth, but only in one way. About fifty strokes should do. Be sure to stroke each needle in the same way from eye to point.

Mount the needles on the card. Then place the whole thing on the point of a needle stuck into a pencil eraser. Watch the compass swing back and forth until it comes to rest with one side pointing to North. Take off the card and mark this side with an N. Mark the rest of the card accordingly. Now the Mariner's compass is ready.

9 Compass

A piece of wood, a dish of water, a needle magnet

Put a small piece of wood in water. Put a needle magnet on the wood. The needle and the wood will turn and then stop. Make a mark on the dish where the needle points. Then turn the needle away and see what happens. It comes back to the mark. Try it again and again. You will find that the needle points the same way every time. A magnet needle points north. A magnet needle that points north, is called a compass.

When a magnet needle is held so that it is free to turn, one end will always point north. A magnet needle that is used in this way is called a compass

10. The Earth as a magnet

A piece of magnetised iron and a household scissors and a compass.

If a piece of unmagnetized iron is left for some time on the ground, it becomes a weak magnet. Because the compass needle is deflected by touching it.

If you bring household scissors near a compass, you will probably find that the scissors are slightly magnetized. Because the earth is itself a magnet.

The earth is itself a magnet. The piece of iron on the ground and the scissors have become magnetized by induction from the earth's magnetic lines of force.

No.
Expt. Content

Materials used

1 Water flows down

A piece of wax paper and water

2. Making water flow up

A funnel and a rubber tube

B

Experimental Procedure

Crumple a piece of wax into the shape of a hill. Pour water over it. Water always flows downhill.

Join a rubber tube to a funnel. Hold the tube in the shape of a hill. The funnel must be higher than the hill. Pour water into the funnel. Water does flow out through the open end of the tube.

Concepts to be Developed

Water cannot flow up over the hills. It can only flow down. When water flows through a tube or pipe, it can be made to flow up a hill as well as down.

3. Water seeks its own level A large sized funnel, a rubber hose, a glass tube, sand and water

Take a large-sized funnel filled with sand. Attach a rubber hose of 2 or 3 feet length with the funnel. Fill the rubber hose with sand. Then attach a glass tube into the other end of the hose. Hold the glass tube higher than the funnel and fill the funnel with water. Lower the glass tube slowly till water rises into the tube. Compare the water level in the funnel with that in the tube. They are the same. Hold the tube over the sink and lower it below the water level in the funnel. Water flows out from the tube as it sinks in the funnel.

Water seeks its own level. An artesian well works like this.

4. Use of steam power A potato and a tea kettle

Put a potato on the spout of a tea kettle so that all the steam pushes against the lid. The lid of the kettle will jump up and down.

Hot steam can push with great force. It can run a steam engine, can run many kinds of machines.

5. Use of water power balloons A piece of thread, a small button and a water wheel

Cut a circle out of one side of a milk carton. Then make two lines across the circle.

Push a sharpened tooth pick through. Now tie a small button to one end of a piece of thread. Tie the other end of the thread to the shaft of the water wheel.

Then hold the wheel in a stream of water. The blades turn, the shaft turns, and the thread winds up and lifts the weight.

The water power can do a tiny bit of work. The water wheel can turn a machine that grinds corn or another machine that pumps water or another that weaves cloth.

6. Upthrust in air A strip of paper about 6" long and 2" wide

Hold the paper at one end and pull it quickly. The paper rises. When you pulled the paper quickly, you crowded and squeezed the air under it. This crowded, squeezed air pushed the paper up.

Air can push up a thing. The same thing happens to an airplane rolling quickly along the ground.

7. Floating of a balloon A balloon

Blow up the balloon and hold it at the end. Then let it go. Watch the balloon whizz around the room until the air is out of it. When you blew up the balloon and held the end, the air in the balloon pushed equally in all directions. When you let the end of the balloon go, the push at that point ceased and the push of the air on the opposite side made the balloon move forward.

A balloon floats up in air due to the up thrust of the air.

The balloon is really a little jet engine.

As long as the air in the balloon has greater push than air outside, the balloon is pushed forward. It is the push of the air inside the balloon that pushes the balloon.

8 Principle of
the aeroplane

A strip of paper.

Hold the strip of water in front of your lips, as shown in the picture, and blow straight across. The paper rises. As the front of the paper is curved when your breath hits this curve, the air comes up a little as it travels across the paper. There is less air right above the paper. There is less air pushing down. By bouncing away some of the air on top, we have made it possible for the air under the paper to push it up. Here is another reason why the paper rose. The air you blow across it was moving fast when air moves forward quickly, it does not push down so hard. That is another thing that makes it easier for the air under the paper to put it up.

There is less air right above the aeroplane. there is less air pushing down. When air moves forward quickly, it does not push down so hard.

C

No. Expt	Content	Materials used	Experimental Procedure	Concepts to be Developed
1	Air pressure —measure—	1. A drinking glass (ii) A piece of paper (iii) Water	1. Fill a drinking glass to the brim with water. Place a cardboard over it. Hold the cardboard against the glass and turn the glass upside down. Take away the hand holding the cardboard. Place the inverted glass on a smooth table top and carefully slide it off the cardboard on to the table top. Move the glass slowly over the table top. Can you suggest a way to empty the glass without spilling the water on the table top?	Air has got upward pressure.
2	Air pressure	(i) A drinking glass (ii) A large container of water	2. Submerge a drinking glass in a large container of water. Be sure the glass is filled with water. Lift the glass up with the mouth down, until the glass is nearly out of the water. Why does not water run out of the glass?	Air has got downward pressure.
		1. Two plumber's force cups.	3. Wet the rims of two plumbers' force cups. Press the rubber cups tightly together and then try to separate them.	Air exerts pressure in all directions.

4. Air pressure (ii) A spirit lamp.
(iii) Water.

4. Place about 3 cm. of water in a tin can which has a screw top. Place the can open on a stove and heat until the water boils and steam issues from the open top. Quickly remove from the fire and screw the cap on very tightly. Allow the can to stand on.

Wherever air pressures are not equal, the air tends to move from wherever the pressure is greater to wherever it is less.

5. Air pressure measurement (i) A barometer tube
(ii) Mercury
(iii) A saucer.

(1) Fill the tube with mercury. Put some mercury on the saucer and press the tube on the thumb. Then place the tube open end down in the jar on mercury.

Air pressure can be measured by the height of the mercury between the levels of the jar and the tube measures the air pressures in centimeter or inches of Mercury.

5. Air pressure (1) A flask with a two hole stopper
(2) Two glass tubing
(3) Two rubber tubing
(4) Two water container.

(2) Through one hole of the stopper fit a jet tube, extending about half way to the top, fit another glass tube of short length through the other hole. Connect 20 cm. rubber tubing to the jet and a 1-metre rubber tubing to the other glass tube. Place some water in the flask insert the stopper, invert the flask. Put the short rubber tube in a container of water on the table and the longer rubber tube in another container of water on the floor.

Air can do work.

- (1) A sheet of heavy paper seven inches square
(ii) A light strip of wood about the size of a foot ruler
(iii) A straight pin

(3) Draw two diagonal lines on the sheet of the paper. Cut the paper along these lines to within an inch and half of the centre. Bend every other corner of the sheet over to the centre so that the points all lay over the centre. Press the pin through being sure to catch all points. Force the pin into the wood just far enough to hold it securely. Adjust it so the friction of power and pin will be as little as possible and the wheel will turn freely. Now blow into the faces of the wheel.

D

1. Chemical compounds

1. Pieces of ferrous sulphide
2. A sheet of paper
3. A bar magnet

1. Take some pieces of ferrous sulphide and ground it and spray it over the paper then hold a bar magnet near the powder.

Chemical compounds cannot be separated into its ingredients.

TEACHERS' QUARTERLY

2 Mechanical
Mixtures

1. Iron filings
2. Sulphur powder
3. Sheet of paper
4. Bar magnet

Mix iron filings and sulphur powder together and put the mixture over a paper and hold a magnet near the mixture.

A mechanical mixture can be separated into its ingredients.

3. Carbon dioxide

1. Blue dye
2. Ten large test tubes
3. Water plant.

Take certain amount of blue dye in ten large test tubes, put sprigs of green water plant and some amount of blue dye. The other three will be the controls for the experiment. These three contain only blue dye no plants. Using a straw if you blow into the tubes, the blue dye will turn into yellow. Put all the tubes in sunlight for one hour.

1. Green plants take in CO_2 .

Carbon dioxide

Do.

After blowing when the blue turns yellow. keep the whole arrangement in a dark place (After one hour the water will still be yellow. Even after leaving the tubes in the dark for 24 hours, you will get the same result) Then bring the arrangement in sunlight, the yellow dye will turn into blue.

2. Green plants take CO_2 only in the light.

Class IX

A

Exp.
No.

Contents

Materials reqd.

Experimental Procedure

1. Effect of heat
on solid

A metal ball and a metal ring, the ball just passes through the ring. A source of heat.

At first see whether the ball is passing through the ring or not. Now heat the ball for a few minutes and then try to pass the ball through the ring and notice what happens.

Solids expand in size with heat.

(b) on gas.

A round bottomed flask, a balloon and source of heat.

Fix the rubber balloon at the mouth of the round bottomed flask see the condition of the balloon. Now heat the flask and notice what change takes place in the condition of the balloon.

Gases expand with heat.

2. Latent heat

A beaker, ice. Thermometer.

Take a hard glass beaker, put some ice in it. Heat the beaker slowly, and immerse a thermometer into this ice, the ice will melt gradually, but the thermometer will show no rise of temperature until the whole of the ice will melt.

Source heat is required to effect a change of state and it remains hidden inside the substance, it is known as latent heat.

- | | | | |
|-------------------------|--|--|---|
| 3. Pin hole camera | A tin box, candle, tissue paper. | Make a fine hole in the bottom of a tin box. Press a tissue paper at the open end of the box, observe the candle flame through the tissue paper in a darkened room. | rectilinear propagation of light. |
| 4. Laws of reflection | A plane mirror, a comb. | Hold a comb in a sun beam falling on a piece of white card board. Tilt the card board so the beams of light are several centimetres long, place a mirror diagonally in the path. | Light rays can be reflected according to certain laws. |
| | A post card, two small mirrors, plasticine or gummed paper. | Make three cuts parallel to the long side of a post card and 2 cm. apart. These will divide the card into four strips, cut away pieces from the ends 2 cm. wide as shown in the diagram, and then fold up the card into a rectangular box. Cut holes in the position shown using a cork borer. Stick small pieces of mirror opposite the apertures, using plasticine or gummed paper. | Rectilinear Propagation of light can be used in different ways. |
| 5. Laws of refraction | A pan, coin some water. | Place a coin at the bottom of a pan near its edge. Ask one of your class mates to step up to the pan so he can just see the coin over the edge of the pan. Then have him step back only far enough to enable him to just see it. Instruct him to hold that position while you begin pouring water into the pan. Pour the water slowly enough to avoid moving the coin by the rush of water. | Light rays bend when they pass from one medium to another. |
| 6. Refraction of light. | A glass, few drops of milk, a piece of dark paper with a hole. | Place a few drops of milk in a glass of water in order to cloud the water. Punch a small hole in a piece of dark paper or cardboard. Place the glass in the direct sunlight. Hold the card in front of the glass. Hold the card so that the hole is just below the water level and observe the direction of the beam. Now raise the card until the beam strikes the surface, observe the direction of the beam of light. | |

B

- | | | | |
|-----------------------------|--|---|---|
| 1. Different kinds of lever | 1. A long board and a block of wood and some load. | 1 The board is placed on the block of wood in such a way that it remains near one end. The load is placed on the shorter arm. | Machines help us to lift a heavy body in an easier way. Lever is one of these machines. |
|-----------------------------|--|---|---|

TEACHERS' QUARTERLY

2. Now the block is close to the middle of the board. The load is tried to be lifted up.
A block and board used in this way is called a lever.
3. A nut is placed between the two edges of the nut cutter and it is pressed hard. It breaks easily.
Here the fulcrum is at one end of the nut cutter.

2. Nut cutter, nut.

A big ball is held with two hands.

3. A bag, ball.

2. Pulley

1. A single fixed pulley, rope.

A single fixed pulley is set up on a hook fixed on a board. A rope is passed through it, a load is placed at one end of the rope and force is applied on the other end.

A pulley carries things up and down or backward and forward.

3. Inclined plane Three books of different thickness string, duster.

The duster is tied with the string and a loop is made at its other end. The little finger is passed through the loop and is tried to lift it. A large book is placed under a slanted book, and the duster is pulled along the slanted book. Again a smaller book is placed under the slanted book, and the duster is tried to pull again.

Lifting heavy things up a ramp is much easier than lifting it straight up.

4. Positive and Negative electricity Ebonite rod, glass rod, silk thread, a piece of silk.

Rub a glass-rod with a piece of silk and hang it from a stirrup. Rub an ebonite rod with silk and hang it near the glass rod. Watch the effect.

Now remove the glass rod and place a charged ebonite rod near the ebonite rod hung before. What happens? Repeat with two glass rods.

(i) Two kinds of electricity e.g. positive and negative electricity.

(ii) Like charges repel each other and unlike charges attract each other.

5. Electric current, conductors, insulators Torch, bulb holder, bulb, copper wire, dry cell, metal clips 4, block of wood, cotton, glass rod, iron nail, brass screw, a length of dry string, a length of wet string, a metal spoon, a plastic spoon, etc.

Place the bulb in the bulb holder, connect the two terminals of a dry battery to the two terminals of the bulb holder by means of copper wire. Observe.

Take off part of one of the copper wires. Observe. Replace it by a few other substances (e.g., glass rod, iron nail etc.). Find out which are conductors and non-conductors (insulators).

1. Electricity flows when it has a complete path (circuit)
2. Some substances conduct electricity (conductors) and some do not (insulators)
3. An electric switch controls the flow of electricity.

6. Effect of electric current Dilute sulphuric acid, zinc plate, copper plate. Immerse the zinc and copper in a dilute solution of sulphuric acid. Potential difference is maintained by the chemical reaction of zinc and sulphuric acid. Hence a continuous flow of current is possible.
- A thin piece of wire, a dry cell. (i) Hold the wire by its two ends and place it across the two screws of the dry cell. Watch effect. Electricity makes light, heat and power.
- A thick piece of wire, a dry cell, a small piece of paper. (ii) Hold the wire by its two ends and place it across the two screws of the dry cell. Watch the effect. Ask somebody to hold a small piece of paper near the wire. What happens?
- A piece of covered wire about two feet long, an iron nail, a dry cell, an iron tack. (iii) Wrap the wire around the nail. Take off the covering from each end of the wire, join one end to one of the screws of dry cell. Place the iron tack on something smooth with the sharp end of nail near it. Then touch one end of the wire to the other screw of the drycell. Watch the tack. What happens?
7. Current strength and resistance Copper wire, Nichrome wire, battery, a small flash-lamp bulb. Connect a small flash lamp bulb to one terminal of a flash lamp battery. To the other terminal connect a wandering lead attached to a crocodile clip. From one terminal of the bulb fasten two parallel lengths of wire about 2 feet long. One should be of copper and the other of nichrome. A current lights the bulb as the clip makes contact at various position on either wire. The bulb will tell you how the nichrome wire resist the current. Does nichrome wire have a bigger resistance than copper wire of the same length? Different metals offer different resistance.
8. Electro magnetic induction A galvanometer, a solenoid connected with a switch, a dry battery, a strong bar magnet about 3" long, a solenoid of about 150 turns of copper wire on a format which fits easily round the magnet. Connect the solenoid to the galvanometer, then proceed thus :—
- (a) Hold the magnet at rest. 1. A magnet can be used to generate electricity.
- (b) Move the magnet inside the solenoid. 2. The generated electric current (induced current) flows when the magnet or magnetic field created by the magnet is moving relative to
- (c) Hold the magnet at rest inside the solenoid.
- (d) Pull the magnet out of the solenoid.

- (e) Push the magnet rapidly into the solenoid.
- (f) Jerk the magnet rapidly out of the solenoid.
- (g) Reverse the magnet and repeat all the above operations.
- (h) Repeat all the above operations using the solenoid (instead of the magnet) through which an electric current is flowing.

the solenoid, i.e. when the number of lines of force through the turns of the solenoid is changing either increasing or decreasing.

- 3. The faster the increasing or decreasing takes place, the greater is the current.
- 4. The direction of the current is reversed when the magnet is reversed.
- 5. A closed circuit consisting of a coil of wire through which an electric current is flowing, gives the same effect as the magnet.

An electric current flows through the wire when the coil is turned between the poles of the magnet.

9. Electric current is produced by rotating a coil of wire between the poles of a magnet

A magnet, a galvanometer, a rectangular shaped coil of about 40 turns.

Make the rectangular shaped coil by winding it on to a strip of wood. Slip off the coil from the wood. Connect the free ends of the coil with the galvanometer. Place the horse shoe magnet as shown in the figure. Rotate the coil between the poles of the magnet.

10. Electric current is produced by moving a coil of wire over a magnet

A galvanometer, a magnet, a coil of wire (diameter about 2").

Connect the free ends of the coil of wire to the galvanometer. Thrust the coil over the magnet. Take out the coil from the magnet.

11. A simple storage battery is charged.

Two strips of lead 2"×5" each, a block of wood 1"×1"×4", sand paper, dry cell connecting wire etc.

Clean the surfaces of the two lead strips thoroughly with sand paper. Nail these to the block of wood. Set the whole in a solution of sulphuric acid and water. Attach two pieces of wires for connectors with the nails. Connect a bell to the cell, see what happens. Disconnect the bell and connect two dry cells and leave it for five minutes. Now connect it with the bell.

There must be difference of potential for a current to flow.

A current flows in one direction through the wire when the coil is thrust over the magnet, the direction of the current is reversed when the coil is taken out from the magnet.

12. Connection in series and in parallel

3 bulb-holders, 3 bulbs and a battery of voltage required by the bulbs, a key, an ammeter.

Introduce one lamp in the series connection. Now introduce more lamps. Next introduce the lamps in parallel connection. Remove one bulb from each connection and see what

Parallel connection is better to use practically and are used in house wiring.

13. Resistances can be compared, shown by different lengths of different wires.

Two equal lengths of copper and nichrome wire, a torch bulb holder, a bulb, a battery.

- *1. Electrification statical electricity

Glassrod, silk, paper strips.

14. Electric fuse

Tin-foil from cigarettes, gummed paper, paper clip, connecting wire, battery 4 volts.

15. Electric for communication

For the sounder, coil, anvil, rubber band, a board to mount these things. For the key a board (3"×6") a metal strip with a hole punched at one end, screws, two dry cells. Copper wire.

16. Wires of different materials produce different amounts of heat

Copper wire, Nichrome wire, 6 volt battery, a key, a wooden rod, fuse wire.

7. Electricity produces heat

Tinplate 5"×2" Nichrome wire spiral, 12 volt battery, connecting wire, key.

18. Metals Fe, Cu, Ag, Pb, Sn, Brass, bell metal, bronze, steel, Magnet, steel thumb tacks, jars.

Aluminium, Cu, Fe, Zn, Ag, Pb, Sn, Brass, bell metal, bronze, steel, Magnet, steel thumb tacks, jars.

happens. Put an iron bar across the battery on the bare wire. What happens?

Make the above connection. The flash of the bulb will show how the nichrome wire resists current. Rub wooden rod, amber rod and ebonite rod with silk and hold in front of the super strip. What happens

Stick the tin-foil to the gummed paper. Cut it into strips about 3" long and of various width ($\frac{1}{8}$ ", $\frac{1}{4}$ "). Connect with two paper clips.

Assemble the sounder and the key. Connect the telegraph sounder, the two cells and key in series, vibrate the key.

Wind equal lengths of copper, nichrome and fuse wires on the wooden rod. Make series connection with the battery and switch. Keep the circuit complete for few minutes. Place the hand near the coils. Judge the heat produced.

Shape the tinfoil. Make two holes $1\frac{1}{2}$ " apart on the ends of the spiral wire to the con-insulated wire through the holes. Join the ends of the spiral wire to the connecting wires. Connect to a 12 volt battery.

Examine the colour of the metals. Try to bend the strips. Try to conceive their weights, consult specific gravity chart. Make a chart as given below.

As you do the experiments. Take a bar magnet and see which ones are attracted. Examine the metal's shielding effect.

Take jars containing water and dip a piece of metal in each, keep these for some days and see what happens. Leave the bright metal pieces in air for some days and examine the effect of air upon them.

Nichrome wire has a higher resistance than C.U. wire.

Electricity can be accumulated if some materials friction.

Heat developed by the resistance of the metal melts it and thus disconnects the circuit protecting thereby the house wiring.

Electric current and the properties of an electromagnet can be utilised in sending news instantaneously in far off places.

Nichrome wires become more heated than copper wires.

A model electric heater may be prepared.

Physical properties are different for different metals. They are different in colour, hardness, sp. gr., magnetic properties etc. And these are used according to their properties.

Class X

Expt. No.	Contents	Materials required.	Experimental Procedure	Concept to be developed.
1. Electrification, statical electricity.		Glass-rod, silk, copper wire, dry cell, paper strips.	Rub wooden rod, amber rod and ebonite rod with the silk and hold in front of the paper strips. What happens?	Electricity can be accumulated in some materials by friction.
2. Positive and negative electricity.		Ebonite rod, glass-rod, silk thread, a piece of silk.	Rub a glass-rod with a piece of silk and hang it from a stirrup. Rub an ebonite rod with silk and hang it near the glass rod. Watch the effect. Now remove the glass rod and place a charged ebonite rod near the ebonite rod hung before. What happens? Repeat with two glass rods.	(i) Two kinds of electricity e.g. positive and negative electricity. (ii) Like charges repel each other and the unlike charges attract each other.
3. Electric current, conductors, insulators.		Torch, bulb holder, bulb, copper wire, dry cell, metal clips 4, block of wood, cotton, glass rod, iron nail, brass screw, a length of dry string, a length of wet string, a metal spoon, a plastic spoon etc.	Place the bulb in the bulb holder, connect the two terminals of a dry battery to the two terminals of the bulb holder by means of copper wire. Observe. Take off part of one of the copper wires. Observe. Replace it by a few other substances (e.g., glass rod, iron nail etc.). Find out which are conductors and non-conductors (insulators).	1. Electricity flows when it has a complete path (circuit). 2. Some substances conduct electricity (conductors) and some do not, (insulators). 3. An electric switch controls the flow of electricity.
4. Simple cell.		Dilute sulphuric acid, zinc-plate, a copper-plate.	Immerse the plates of zinc and copper in a dilute solution of sulphuric acid.	Potential difference is maintained by the chemical reaction of zinc and sulphuric acid. Hence a continuous flow of current is possible.
5. Effect of electric current.		A thin piece of wire, a dry cell. A thick piece of wire, a dry cell, a small piece of paper.	(i) Hold the wire by its two ends and place it across the two screws of the dry cell. Watch effect. (ii) Hold the wire by its two ends and place it across the two screws of the dry cell. Watch the effect. Ask somebody to hold a small piece of paper near the wire. What happens?	Electricity makes light, heat and power.

A piece of covered wire about two feet long, an iron nail, a dry cell, an iron tack.

(iii) Wrap the wire around the nail. Take off the covering from each end of the wire, join one end to one of the screws of dry cell. Place the iron tack on something smooth with the sharp end of nail near it. Then touch one end of the wire to the other screw of the drycell. Watch the tack. What happens?

6. Current, strength and resistance.

Copper wire, Nichrome wire, battery, a small flash-lamp bulb.

Connect a small flash lamp bulb to one terminal of a flash lamp battery. To the other terminal connect a wandering lead attached to a crocodile clip. From one terminal of the bulb fasten two parallel lengths of wire about 2 feet long. One should be of copper and the other of nichrome. A current lights the bulb as the clip makes contact at various positions on either wire. The bulb will tell you how the nichrome wire resists the current. Does nichrome wire have a bigger resistance than copper wire of the same length?

Different metals offer different resistance.

7. Electromagnetic Induction.

A galvanometer, a solenoid connected with a switch, a dry battery, a strong bar magnet about 3" long, a solenoid of about 150 turns of copper wire on a format which fits easily round the magnet.

Connect the solenoid to the galvanometer, then proceed thus :—

- (a) Hold the magnet at rest.
- (b) Move the magnet inside the solenoid.
- (c) Hold the magnet at rest inside the solenoid.
- (d) Pull the magnet out of the solenoid.
- (e) Push the magnet rapidly into the solenoid.
- (f) Jerk the magnet rapidly out of the solenoid.
- (g) Reverse the magnet and repeat all the above operations.
- (h) Repeat all this with the solenoid (instead of the magnet) through which an electric current is flowing.

1. A magnet can be used to generate electricity.

2. The generated electric current (induced current) flows when the magnet field created by the magnet is moving relative to the solenoid i.e., when the number of lines of force through the turns of the solenoid is changing—either increasing or decreasing.

3. The faster the increasing or decreasing takes place, the greater is the current.

4. The direction of the current is reversed when the magnet is reversed.

5. A closed circuit consisting of a coil of wire through which an electric current is flowing, gives the same effect as the magnet.

8. Electric current is produced by rotating a coil of wire between the poles of a magnet. A magnet, a galvanometer, a rectangular shaped coil of about 40 turns. Make the rectangular shaped coil by winding it on to a strip of wood. Strip off the coil from the wood. Connect the free ends of the coil with the galvanometer. Place the horse shoe magnet. Rotate the coil between the poles of the magnet. An electric current flows through the wire when the coil is turned between the poles of the magnet.
9. Electric current is produced by moving a coil of wire over a magnet. A galvanometer, a magnet, a coil of wire (diameter about 2"). A current flows in one direction through the wire when the coil is thrust over the magnet, the direction of the current is reversed when the coil is taken out from the magnet.
10. A simple storage battery is made and charged. Two strips of lead 2"×5" each, a block of wood 1"×1"×4", sand paper, dry cell connecting wire etc. Clean the surfaces of the two lead strips thoroughly with sand paper. Nail these to the block of wood. Set the whole in a solution of sulphuric acid and water. Attach two pieces of wires for connectors with the nails. Connect a bell to the cell, see what happens. Disconnect the bell and connect two dry cells and leave it for five minutes. Now connect it with the bell. There must be difference of potential for a current to flow.
11. Connection in series and in parallel. 3 bulb-holders, 3 bulbs and a battery of voltage required by the bulbs, a key, an ammeter. Parallel connection is better to use practically and is used in house wiring.
12. Resistance can be compared, shown by different lengths of different wires. Two equal lengths of copper and nichrome wire, a torch bulb-holder, a bulb, a battery. Introduce one lamp in the series connection. Now introduce more lamps. Next introduce the lamps in parallel connection. Remove one bulb from each connection and see what happens. Put an iron bar across the battery on the bare wire. What happens? Nichrome wire has a higher resistance than copper wire.

13. Electric fuse. Tin-foil from cigarette packet, gummed paper, paper clip, connecting wire, battery—4 volts. Stick the tin-foil to the gummed paper. Cut it into strips about 3" long and of various width ($\frac{1}{4}$ ", $\frac{1}{2}$ "). Connect with two paper clips as in the figure. Heat developed by the resistance of the metal melts it and thus disconnects the circuit protecting thereby the house wiring.
14. Electricity for communication. For the sounder:—coil, anvil, rubber band, a board to mount these things. For the key—A board (3"×6"), a metal strip with a hole punched at one end, screws, two dry cells. Copper wire. Assemble the sounder and the key. Connect the telegraph sounder, the two cells and key in series vibrate the key. Electric current and the properties of an electromagnet can be utilised in sending news instantaneously to far off places.
15. Wires of different materials produce different amount of heat. Copper wire, Nichrome wire, 6 volt battery, a key, a wooden rod, fuse wire. Wind equal lengths of copper, nichrome and fuse wires on the wooden rod. Make series connection with the battery and switch. Keep the circuit complete for few minutes. Place the hand near the different coils. Judge the heat produced. Nichrome wires become more heated than the copper wires.
- Electricity produces heat. Tinplate 5"×2" Nichrome wire spiral, 12 volt battery, connecting wire key. Shape the tinfoil as shown in the figure. Make two holes $1\frac{1}{2}$ " apart on the sheet. Pass the two ends of the insulated wire through the holes. Join the ends of the spiral wire to the connecting wires. Connect to a 12 volt battery. A model electric heater may be prepared.
16. Metals Fe, Cu, Al, Zn, Pb, Au, Ag, Sn, their physical properties and uses and their alloys. Aluminium, Cu, Fe, Zn, Au, Ag, Pb, Sn, Brass, bell metal, bronze, steel strips, Magnet, steel thumb tacks, jars. Examine the colour of the metals. Try to bend the strips. Try to conceive their weights, consult specific gravity chart. Make a chart. Physical properties are different for different metals. They are different in colour, hardness sp. gr., magnetic properties etc. And these are used according to their properties.
- As you do the experiments. Take a bar magnet and see which ones are attracted. Examine the metal's shielding effect.
- Take jars containing water and dip a piece of metal in each. Keep these for some days and see what happens. Leave the bright metal pieces in air for some days and examine the effect of air upon them.

Review of Work

The quarter ending 31st March, 1963 was one of extensive activities.

The Education week was held from the 6th to the 12th January, 1963. It was sometime after the sudden massive Chinese invasion of India had given place to an equally sudden and extremely uneasy cease fire and in the background of peace-efforts initiated by some Asian and African countries. The duties of teachers and students were cut out in the given situation. Normal day to day work continued while the atmosphere was charged with a spirit of patriotic vigilance.

Workshop meetings on "Evaluation" in different school subjects, held from the 7th to the 12th January, 1963, constituted an important part of the Education Week programme. Some teachers from schools outside Calcutta also took advantage of the programme to take the assistance of the Co-ordinator in making new teaching programmes.

Four extension lectures were held as following :—

1. Swami Vivekananda, by Sri T. P. Roy,
2. Relations Between India and China, by Dr. P. Chakravarti.
3. Patriot-poet D. L. Roy, by Dr. A. Banerjee.
4. Modern Bengali Poetry, by Sm. Bani Roy.

All these lectures had special meaning for the audience in the background of the crisis through which the country is passing and also because 1963 is the birth centenary year of both Swami Vivekananda and D. L. Roy.

The Pupils' and Teachers' Days were observed on the 11th and 12th January, respectively. A march past followed by a programme of patriotic songs by a thousand students from

fourteen schools constituted the main part of the Pupils' Day programme. Prizes were also given, on this day, on the results of a Schools' Defence Posters competition organised by the Department of Extension Services immediately before the Week. Posters received from thirteen schools had been on exhibition from the 6th January and a panel of three judges decided Beltala Girls' School and Bethune Collegiate School to be the first and the second. Mrs. Renuka Roy took the salute at the march past and gave away the two prizes and Miss M. Bose, Chief Inspector, Women's Educations was the Chief Guest.

Sm. Purabi Mukherjee, Minister for Jails, Police and Social Welfare, presided on the Teachers Day programme of patriotic songs which also served as the closing meeting of the Education Week. Eighty teachers from twenty-four schools participated in the programme.

A "Science Fair" was held on the 2nd February, 1963. A report, rendered by Sm. A. Banerjee, the sponsor, appears in this issue.

A five-day camp workshop (February 22nd-26th, 1963) on "Emotional Integration" was held at R. S. Girls' School, Tamluk. Seventy-eight teachers from schools all over the subdivision stayed in to participate enthusiastically in deliberations extending, at times from 8-30 A.M. to 10-30 P.M. with negligible gaps for meals, bath and rest.

We are sorry that detailed reports of the above programmes had to be crowded out of the present issue by the "Curriculum Guide" prepared by teachers of science in the Pujah Holidays. We can, however, assure our readers that these will appear in the immediately following issues.

KALYANI KARLEKAR.

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- * To stimulate students and teachers in the use of improvised apparatus and in the adoption of activity programmes.
- * To provide a forum for exchange of experience in science projects, new experiments in science and mathematics teaching, and science activities.
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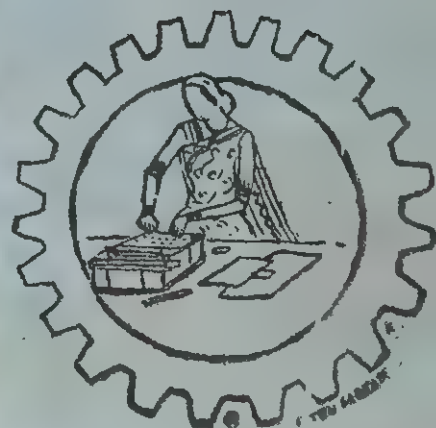
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TEACHERS' QUARTERLY



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TEACHERS' QUARTERLY

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Teachers'

Quarterly

FOREWORD

Four parallel refresher courses were held by the Extension Service Department of the Institute of Education for Women during the Summer Vacation this year. Three groups worked on school subjects, viz, Bengali, Mathematics and Geography and a fourth group had a workshop on the problems of fostering emotional integration through school work.

The response from teachers this year was heartening indeed! More than a hundred teachers participated in the various courses, in spite of the fact that we could offer them no hostel facilities this year. The usually quiet and deserted vacation time atmosphere of the college hall, library and classrooms was humming with life and activity for more than a fortnight.

Most of the participants were very enthusiastic and eagerly interested in their work. They all felt that they were arriving at satisfactory solutions to some of the age-old educational problems that had always baffled them in the classroom. Yet many of them appeared to be rather dubious, and some were positively sceptical as to whether such better methods could actually be introduced in their own schools.

There was an interesting discussion in the emotional integration group, viz, what prevented the introduction into our schools of those modest reforms at least, about whose value there was no doubt and which did not involve any excessive amount of expenditure on the part of the school or too much extra work for the teachers.

On the one hand, the few headmistresses present in the group proposed that they were quite eager to start this or that reform programme immediately and were prepared to give every facility to the teachers who would put them into practice, but the latter were unwilling to put in an ounce of extra work or devote a minute of extra time, in order to improve education in the school. The teachers who were parti-

cipating in the discussion claimed, on the other hand that, they were willing to put in a reasonable amount of extra labour provided it really improved their schools. The headmistresses of their particular schools were however, concerned only in the stereotyped coaching of pupils for the final examination and were suspicious of all "new fangled" notions of improvement.

Unfortunately, this is very often true. We have found too often that enthusiastic teachers fail to find jobs in schools administered by progressive headmistresses, who could use their enthusiasm and energy for the constructive reform of education. Headmistresses who were eager to improve their schools, on the other hand, were frequently confronted with teachers who felt so overburdened with their day to day routine work, that they cared nothing for the improvement of education. Again, there were many headmistresses and teachers, who realised that all was not well in their schools, and who were also willing to work for reforming their schools but there was nobody to give them a helping hand or a word of advice and encouragement in their work.

Some of the participants of our summer courses promised that they would make honest attempts to put their newly acquired ideas into actual practice, when they went back to their schools. It would be a great pity if they tried to do so sincerely, but were not able to continue due to unfavourable circumstances, unsympathetic criticisms and lack of help and encouragement.

It would be quite pertinent to mention in this connection that the excellent response we had from teachers this year, was chiefly due to the help of the District Inspectresses of schools and specially to that of the Chief Inspector Women's Education, West Bengal. We are thankful to them for this cooperation and we know that such help will be available every year. But, we feel that it is not enough that the Inspectorate should give publicity to our programme and encourage teachers to come and join our workshops. We are hoping that ways and means will be found in the future so that the Inspectorate can actively encourage the headmistresses and teachers, who join in these courses, to reform their schools in the light of the new ideas they gain from us.

We, on our part, are willing to offer the maximum help that our resources allow to those schools who would start projects and programmes for the improvement of education.

Roll of Social Research in a Changing Society

Sudhendu Mukherjee.

SOCIOLOGIST, C.M.P.O.

(*From an Extension Lecture delivered in connection with the Workshop on Social Studies held in October 1962*)

India is witnessing big changes in all fields of society—economic, social and political. But such social changes are often confronted with orthodox traditions, both in the field of ideas and practices. Social changes, therefore, do not follow smooth and even paths, they are often tortuous and complex. The problem is whether we can measure such changes and indicate their patterns and broad trends.

Again, how precise and accurate such measurements can be? Can they be as precise as we find them in other scientific fields, say, mathematics, physics, chemistry or biology? Can we plan or predict social changes accurately? Sociologists would possibly answer in the negative,—no, the equipment and apparatus of the social scientists are as yet not precise enough.

Even if the techniques of social research are not precise and dependable enough we cannot afford to neglect the useful results that are derived from social research. Social research aims at knowing and identi-

fying the different currents of social movement that prevail in a society and then further isolate such processes with intensive investigation and analysis of a particular social phenomena or problem. After such scientific analysis of problems, we might get some solutions or general principles on which we may plan something better for the future. Some illustrations would clarify the point.

We all admit that rapid industrialisation is the answer to many of our social and economic problems, which are largely due to a backward and stagnating agricultural economy that we have. For rapid industrialisation, we need money, machine and technical skills. For the latter, ie, technical skills, we need technical institutions and a new generation of students eager to learn the varied aspects of modern technology. We are therefore expecting big changes in the occupational pattern in our society. A society so long largely dependent on agriculture and a dwarfed and handicapped industry have to take big strides in the field of industry and

also, modernisation of agriculture. The question arises therefore as to to what extent different social groups in different parts of our country are coming over to such occupational changes in life? Are all social groups advancing in the same rate and extent or do we find a varying rate of acceptance of these new occupations in our industry add agriculture, based on modern technology?

Sample survey among different social groups would determine the factors in such a social question. We may find a number of factors variables, like caste, education, religion, extent of urban contact, parental occupation, income-level and such others which are related to acceptance or non-acceptance of a new avocation or occupation in life. We again need a selected group of questions in the form of a questionnaire to be administered to select or sample groups of respondents, ie, people from whom we gather such social information,

We thus come across detailed questions of methodology in social investigations like the preparation of of a schedule or questionnaire, the selection of one or a few social groups, preparation of a statistical sample from the total population of that chosen group, training of investigators who would administer such questionnaires, etc. After collection

of such information the data have to be tabulated and analysed systematically so that we may reach some broad conclusions or generalisation in the form of a short report. With such conclusions, we can possibly plan in a better way our programmes and techniques of vocational education. It should be emphasised here that each of the above-mentioned steps, namely, isolating a problem for study and its exact definition and scope, the selection of the sample population whose reaction whole reactions would be investigated, preparation of the questionnaire, the field-investigation, tabulation and analysis and drawing of necessary conclusions generalisations,—require careful study and preparation.

Such social surveys are going on in our country on a big scale and one enquiry is helping the other or preparing new bases of social enquiry. Some social enquires try to answer broader questions and some cover narrow ground, involving a smaller community with a smaller horizon of social life.

Some studies are made on a sample basis in different regions of the conclusion drawn from the survey are generalised for the entire country. Then, similar studies in different parts of the country are compared to know how much of the conclusions are correct or valid. Since our country is

a vast one, such regional sample studies are essential from the point of view of economy and time. Moreover, microscopic studies, i.e. studies which are intensively carried out for a small population or area and macroscopic studies, i.e. studies which cover a wider region in a general way mutually support each other.

Changes mentioned earlier not only affect our economic life through intensification of the industrialisation programme and modernisation of farm-practices, but also our social life, our family life—the customs, tradition, values and outlook which influence our mind.

There are changes in the marriage-customs, divorce laws and rules about property inheritance and increased popularity of family planning practices all these are of deep-seated significance. Technology, small gadgets for house-hold work, modern methods of mass communication and recreation like radio, wireless, T.V., Cinema

and the like are constantly impinging on our conservative mind and are generating revolutionary changes in outlook. Along with such changes, different types and patterns of group-relations are emerging. Our lives are becoming more and more individualised and group-conflicts are generating various tensions in society. Such tensions and forces, again, either support or oppose social changes.

By applying methods of sociological enquiry, we can try to understand various types of social problems, the social forces operating in the society and the broader trends of social change. Sociological research is yet not mature and refined enough to measure social phenomena accurately, analyse precisely and predict conclusively, as other natural sciences, like physics, chemistry or biology, but social research can, no doubt, help a great deal in understanding our society and planning something better for the future.

EMOTIONAL INTEGRATION

(Report on a seminar held at Tamluk from the 22nd to the 26th February, 1930 condensed and translated from original Bengali)

The massive Chinese invasion on India of September 1962 had seemed to have solved the problem of national integration for India. The Department of Extension Services of the Institute of Education for Women had utilised this sudden resurgence of feelings for programmes of discussion and activities of integrative nature, but teachers of outstation schools were mostly left out of its scope.

This led Sm. Sucharita Das, headmistress of R. S. Girls' School, Tamluk to take initiative in organising a five-day seminar, from the 22nd to the 26th February 1963, on national and emotional integration, in her school. More than 70 teachers from different parts of Tamluk Subdivision came to participate and the Department of Extension Services was only too happy to cooperate. Participating teachers and resource persons were housed in the school and hostel premises. General meetings were held in the new, still unfinished, school hall and group meetings were held in the class-rooms. Mrs. N. Das, Principal of the Institute of Education for women, Mrs. Karlekar, Co-ordinator Prof, S. P. Mukherjee, Miss R. Biswas Miss U. Nag and Miss A. Dutt from Calcutta acted as resource persons.

There were five broad areas of discussions, viz— (i) National and emotional integration, (2) Character building, (3) Creation of understandings and attitudes (4) School activities and (5) Teacher-training for the promotion of national integration. Practical implications of these broad ideas were specifically threshed out in three subject-area groups as follows :- (1) Languages, (2) Social Studies and Social Sciences and (3) General Science and Sciences.

Mrs. N. Das started the proceedings on the 22nd at 4 p.m. by opening an Educational exhibition organised by the teachers and students of the R. S. Girls' School. A great centre of attraction in the exhibition was a collection of ancient and medieval historical relics of the old port of Tamralipta kindly lent for the occasion by Mr. Hrishikes Mukherjee. Mrs. Das delivered her inaugural talk on "Emotional Integration" at 6.30 P. M.

She said that the problem of integration had not worried us before India had become free. Under the British Empire the main concern was to drive the foreign rulers out. This was a negative approach which lost its meaning with the attainment of

independence and, at the same time differences regarding languages and religions became so prominent that the country seemed to be falling apart. She felt that integration was not an intellectual concept which could be attained through mathematical calculation. It was a state of mind not to be learnt from books this had to be acquired from living in the world. The duty of teachers, therefore did not end with the imparting of information but had to continue in the inculcation of behaviour and activity patterns.

Mrs. Karlekar, following, said that the country was going through an experience of integration arising from a national emergency and that all efforts should be made to give to this unity a permanent shape based on fundamental values, India did not have geographical, religious, ethnic and linguistic unities, but the fact that the feeling of nationhood was able to supersede all diversities shows that a red thread was running underneath. It was the duty of teachers to find it out and strengthen it.

Miss Renuka Biswas referred to economic inequalities which worked against the feeling of integration and suggested that human values should be emphasised to counterbalance the economic concept of man.

The subject was then opened to the house. The main participants in the

discussion were Sarvasri Pranab Kumar Misra, Amalendu Mukhoti and Prasanta Das and the following points were taken—(1) The chief defect in education today was too much of "lecturing" and trying to orient pupils through precepts only

(2) There was a great discrepancy between words and behaviours of the "leaders of the people" which, reflected on the teachers, affected the lives and actions of the students, and,

(3) Teachers did not try to understand the pupils' minds, but tried to repress their sensibilities which resulted in unpleasant teacher-pupil relations.

Some positive measures for the promotion of integration were suggested as follows :—(1) Powerful and important people who are admired and imitated should lead model moral lives and establish contact with the "masses"

(2) Teachers should establish themselves through honest, selfless and loving behaviour irrespective of what the people at the top are doing and use their schools as centres for the improvement of the community in general. Routine school programmes like the daily general assembly or prayer meeting with devotional and patriotic songs, observation of national occasions and birthdays of great men, discussion on their lives and teachers etc could form a suitable

background for integration while good use of school library, institution of a question box, cultivation of the liberal arts and crafts, realiation of the dignity of labour through school clean-up (safai), inculcation of good habits of diligence, punctuality etc would go a long way towards the creation of balanced personalities.

A short concluding speech was delivered by Sri Kalobaran Chattopadhyaya, the headmaster of Hamilton High School. He referred to the changed teacher pupil relationship in modern schools and requested the teachers to think of ways and means of making their precepts more effective. They should try for self-improvement and at the same time, hide their defects from the pupils.

(Reported by Arati Bhattacharya and Pranab Kr. Misra)

The next day's (23rd) morning session began from 8.30 A.M. The subject of discussion was "Character-building." Mrs. Das began by saying that the objectives of education were to build character and develop potentialities and not to finish the syllabus or help the students to pass their examinations by hook or by crook. As a child's mind was composed largely of instincts, one had to look into these for finding out facts about character. As the child grew, the instinctive materials developed into character traits, but it was not reason-

able to look for complete maturation at any point in student life. Even an adult was not always able to maintain standards of adjusted behaviour.

Character was a mixture of all its components good, bad or indifferent. It could be analysed but not rigidly defined. Habit was an instrument for stabilising desirable character-traits. It was easy to inculcate good habits in early youth but became increasingly difficult with age.

Habits were formed under the influence of social and environmental backgrounds. Attitudes, also, were stamped by ideas gathered from the environment. In this, the first influence was of the home and then, of the school. Harmony between these two was necessary for a balanced development of character.

Character was expressed internally in thought and externally in action. Teachers were concerned not only with examination results but with these expressions also. As children came into schools with their character very largely shamped, the problem before the teacher was that of reorientation and rebuilding rather than of making a beginning.

Sentiment, as a part of character, was not unreasoned emotion, but based on rational judgment. Teachers at the secondary school level were deeply concerned with the development of rational sentiments in the

pupils. Nationalism was a sentiment which could be desirably effective only on the basis of intelligent understanding.

India was an old country with a glorious heritage. Indian culture was a mixture of various cultures of the East and the West and, therefore, conducive to cosmopolitan values accepted all over the world as basic to human civilisation. Such values, accepted by guardians and teachers into their philosophy of life and expressed in thoughts and actions could lay the foundation of an adequate nationalism in the next generation.

Mrs. Das' talk was followed by discussion the main participants in which were Sm. Arati Bhattacharya, Sarvasri Subodh Chandra Guchait, Pranab Kr. Misra, A m a l e n d u Mukhoti, Rashbehari Satpati, Abani Rakshit, Kishori Ranjan Goswami and Jitendranath Samanta.

All of the participants rejected the idea of character formation through punishment and emphasised the need for the inculcation of high ideals. The salient points brought out were—

- (1) Schools should lay the foundations of good behaviour and good nature according to the students' natural trends and not by force. No forcibly effected change could be permanent.

- (2) Analytic discussions, on actions and duties of students and not punishment provided the true method of character formation. This procedure of finding out right and wrong developed a radical sense of honesty.

- (3) Respect for teachers and reverence for national ideals were bases of integration. In developing love for the best elements in national tradition the attention of the students should be attracted away from the cheap and the light and towards the deeper tones in our culture.

- (4) Emotional love for the country should be sustained by the sterner qualities of character like honesty, discipline, punctuality etc.

The topic for discussion in the afternoon session was "Creation of understandings and attitudes" opened by Mrs. Karlekar with a reference to the morning's points on gradual change through the development of desirable understandings and attitudes as the best method for character formation. She said that it was only natural for teachers to ask how such understandings and attitudes could be cultivated.

Difference in attitudes often led to difference in progress in students who

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Difference in attitudes often led to difference in progress in students who

were otherwise equal. A positive attitude permitted a person to proceed through discussion and consensus while a negative minded person could never arrive at an agreed conclusion. Understandings, which created outlooks and attitudes, developed under the influence of environment, experience and activities. It was the function of schools to create a desirable environment and provide suitable experiences and activities.

Sms. Uma Nag, Sandhya Bose, Banalata Mandal and Sarvasri Amalendu Mukhoti, Pranab Misra, Jitendranath Samanta, Madan Baitalik and others participated in the discussion and the points developed were :—

(1) Students should be given responsibility for constructive activities in order to develop self-confidence and a positive outlook.

(2) Desirable teacher-pupil relationships were expected to arise out of joint participation in such activities and acceptance of responsibility would foster courage, confidence and respect for others' work and opinions.

(3) Proper care should be taken of students' health in pursuance of the principle of "a healthy mind in a healthy body". They should be made conscious of the need for physical development and their parents should be induced to take interest.

In concluding, Mrs. Karlekar em-

phasized the need for a loving and permissive atmosphere in schools for the development of a sense of "belongingness" in the students. The best possible start for a positive approach to life, according to her, was a positive approach to life, according to her, was a positive approach to school life.

(Recorded by Kanak Das, Subhas Chandra Pramanik and Nandadulal Adhikari)

Mrs. Das opened the morning session on the 24th February with a discussion on activities conducive to the development of desirable attitudes. Sms. Nilima Nag, Namita Sarkar, Sandhya Bose, Arati Bhattacharya, Asima Roy and Sarvasri Sasanka Sekhar Panda, Virendra Jana, Subhash Paramanik, Ajit Bhattacharya, Pranab Kumar Misra and Nandadulal Adhikari joined in the discussion to develop the following points :—

(1) The maintenance of cumulative record cards was a good way of assessing attitudes because teachers had to engage their pupils in various types of work and observe their reactions closely in order to obtain data for entering co-curricular activities, interests and personality traits into the cards. Types of activities suggested were debates, dramatic performances, social occasions, games, sports, physical drills, cooking, craftwork etc.

(2) The organisation of hobby clubs had been recommended by authorities in education, but there were some difficulties in the way. Most of our school pupils had no hobbies, family attitude was often antagonistic, there was very little money to spend beyond absolute necessities. Teachers should think of ways and means of getting over these difficulties.

(3) School consumers' and producers' societies could bring forth a large number of beneficial skills and understandings. Students' handwork and products from the school kitchen garden could be sold in the producers' societies while the consumers' stores could deal in essentials like books, paper, pens, pencils etc brought at wholesale rates. Profits would be used for improvement of the school and welfare of the students.

(4) Social service within the school and in the community was another way of developing desirable character traits. Good public relations could be engendered through school community projects while observation of national "days" and occasions could be undertaken as integrative programmes.

(5) Provision of special help for backward pupils and enrichment programmes for gifted ones would go a great way towards evolving satisfied, balanced personalities.

(6) Participation in organisations

like the N.C.C., A.C.C. Boy Scouts, N.D.S, etc. would help in integration at school and national levels.

(7) Listening to radio programmes was considered to be beneficial, but it was felt that more could be achieved by enabling talented pupils to participate in such programmes.

(8) It was felt that, in organising competitive group activities, great care should be taken to achieve a balance between competition and co-operation.

At the end of the discussion Mrs. N. Das and Sri S. P. Mukherjee explained the nature of co-and extra-curricular activities and said that both were related to curricular work and that distinctions between these were gradually being eliminated. Further, as co-and extracurricular activities enriched school programmes, there was no reason to think that these would hamper studies; they were planned, rather, to improve the quality of curricular work.

(Recorded by Sm. Gita Das and Sri Madan Mohon Baitalic)

The afternoon session on "Teacher-education for National Intergration" was opened by Mrs. Das who said that much of the modern educational thinking was becoming useless in actual working on account of a lack of teacher-orientation. Quite a lot of educational research was being

carried on in the country but the findings were not used for the improvement of education. A peculiar type of insincerity was spreading amongst students and teachers.

It should be remembered that, since the attainment of independence in 1947, the first duty of the people in the field of education as in all other walks of life was to become self-sufficient. The Departments of Extension Services wanted to supply the bases and opportunities for the development of courage and new ideas. There were seven such Departments in West Bengal and it was within their competence to help in the evolution of attitudes and understandings conducive to emotional and national integration.

Prof. Mukherjee said that there was a dual level in thinking about modern methods of teaching. "Authorities" complained that teachers continued to follow their old ways of teaching even after being trained while teachers said that they were unable to do anything new because of lack of support from the authorities. Teachers were also divided amongst themselves. They lost heart or forgot what they had learnt before, or failed to prepare themselves adequately for their daily routine of teaching. Very often misuse of time by teachers themselves hampered the progress of teaching so that the curriculum was

inadequately or inequally dealt with. It was, however not difficult to improve the quality of teaching. Slight care for the subject to be taught, slight forethought about its relations with other areas, a little consultation with teachers of other subjects, a bit of planning—all these small things would go into the regeneration of the whole system. Further, teachers should prepare new types of tests on every bit of subject area covered in class so that they would have prepared sets of questions ready at the time of examinations. They should also note down new ideas or methods whenever they came across any.

Teachers should provide opportunities for pupils to work. They should override their own difficulties in order to help the students better. Group discussions such as were taking place at the seminar were very good in as much as the old and the young could come together through the Departments of Extension Services.

Mrs. Karlekar referred to the "renaissance" in education mentioned in the report of the Mudaliar Commission on Secondary Education. This involved the creation of a particular mentality. Education as the most important material in the building of a nation should be dealt with as an urgent matter and carried through adequately over in periods of emergency. Able teachers should be

content to tread the lonely furrow even if others were not ready to follow them. They should spread their message through books and journals and carry on action research to show the way to others.

(*Recorders—Sm: Nilima Samanta and Sri Rashbehari Satapati*).

The last general discussion on national integration "The Bases of Indian Unity," was held on the 25th February, 1963. Sja. N. Das opened with a resume of the discussions of the previous days and connected these with the topic in hand. Sms. Renuka Biswas, Bina Devi, Nilima Nag, Arati Bhattacharya, Sudha Dutta, Sandhya Basu, Asima Ray and S a r v a s r i Prakashchandra Das, Birendranath Jana, Bhabani Prasad Bhattacharya, Rashbehari Satpati, Narayan chandra Maiti, Pranab Mitra, Abani Rakshit, Jiten Samanta, Subhas Pramanik and Subodh Goswami participated in the discussion.

It was accepted unanimously that the great feeling of unity that had arisen in India under Chinese aggression in spite of all the differences of language, manners and customs, could be taken as the genuine basis of Indian nation-hood. Various activities and progammes were suggested for making the feeling more stable, -viz-

(1) To make the atmosphere and instruction in schools more conducive to the sense of unity. To make the

school, taken as the "alma mater" as starting point for a love for the motherland. To honour the national flag and the national anthem. To take the oath of national solidarity. To ensure universal participation in the singing of the national anthem and patriotic songs.

(2) To introduce activity programmes for practical application of high ideals.

(3) To give expression to national cultural traditions through music, dance, drama etc. To present regional cultural forms, folk dances and songs. To express ideas of unity through plays, tableaux, pageants etc. To read translations of regional language literature.

(4) To make pen-friends of school pupils in different parts of the country. To organise school trips to different parts of India and if travelling was considered to be too expensive, to "see" India in films, slides, pictures etc., to invite people from different regions to the school and hear about their "way of life". To exchange ideas and cultural programmes from different regional and denominational schools in the locality.

5) To try for integration within the school where pupils from different regions or religious groups or different castes study together. It was felt the such group feelings outside the school would make the work difficult but that teachers

should go on trying in spite of seemingly insurmountable obstacles.

6) To present simple quotations from Vedas and Vedantas and other religious scriptures before students. To discuss the essential unities of all religions. To read and hear about the lives of great men of all countries.

Apart from these suggestions for constructive activities, there was some discussion on the language problem. There was general agreement on the point that strict egalitarianism was the only basis for linguistic understanding. The late Sri Asutosh Mukherjee, when he had introduced the study of Bengali up to the highest level in Calcutta University, had made a study of a second Indian language obligatory as the "subsidiary" while Bengali was the "major". We had hoped that inter-regional-language-understanding would be easy and cultural exchange facilitated if students of Indian languages everywhere in the country were acquainted with another Indian language. Unfortunately this idea was not taken up at the "all India" level. The consensus of the seminar was that it could even be possible to develop a "mixed" all India language (of Urd 48) if free and equal development and exchange of all India languages was imparted.

The question of an all India script either Roman or Nagri—was partially discussed in this connection.

Some were of the opinion that the solution of the problem of Indian languages did not lie in the equalisation of the fourteen scheduled languages. There were about 200 different languages in India. It would not be possible to give all of them equal position. This group, therefore, felt that, instead of trying to give preference to one Indian language over others, English should be included in the schedule and adopted as the Federal language. English was an international language and there was now no reason to reject this language under the compulsion of an old slave mentality. This group felt that national integration would be possible through English only and a command of English would also give India an important position in international affairs.

A smaller group was of the opinion that it was useless to adopt something far in place of something near. It was illogical to accept English permanently just because a historical accident had foisted it on us. Hindi offered a better alternative, though not a perfect one, in this confused linguistic situation.

There was a weak proposal in favour of Sanskrit to which Mrs. Das

replied that though it was doubtful whether anybody would be benefitted by such a measure, there was no doubt about the fact that by far a very large

majority of the people of the country would suffer because of it. There was a general opposition to Sanskrit because of the difficulty of the language.

(*Recorders—Sm. Sadhana Roy and Sri Sasanka Sekher Panda*)

GROUP DISCUSSIONS

The topics for discussion on Social Studies were listed as follows :—

- (1) How to create pupil-interest in Social Studies.
- (2) Whether Social Studies had any uses in social and individual life.
- (3) How to simplify the complicated historical topics of the syllabus.
- (4) Whether it was necessary to discuss history in such details.
- (5) What was the utility of learning about the different tribes in India.
- (6) What was the relationship between the different sections of the syllabus of Social Studies.
- (7) How should Social Studies be taught in rural areas where adequate materials and other facilities were not available.
- (8) How Social Studies was taught in other countries.

Sm. Renuka Biswas gave suggestions for the creation of interest. Visual aids like charts, pictures could

be used and extra-curricular reading materials could be provided. Useful books were available in the national Library at Calcutta and rural school-teachers could explore the resources of district and circulating libraries. Films could be screened with the help of the Social Education Department. Travels and field trips could be arranged. The Indian Museum at Calcutta was a source of historical information and local resources of historically or geographically significant places could be explored in rural areas.

About simplification of historical materials given in the syllabus, most of the participants were of the opinion that only such topics which helped to develop social consciousness should be used for teaching. Others however, felt that a complete study of history was necessary for preserving the sense of continuity and inter-relatedness and also that there was scarcely anything in history irrelevant to social development.

Sm. Anu Dutta said that the apparently disparate topics of Social

Studies syllabus were really related. Physical environment, historical events, economic and political systems, international relations—all went to determine the lines of development of a society. If the physical environment was taken as the stage, history was the drama enacted on it. The other subject-areas were also similarly connected. She added that history and geography had a sort of space-time relationship.

Sri Amalendu Mookhoti said how he used the local community background for materials for Social Studies. His students started with social service in the village by helping poor families, cleaning up, repairing roads etc. Sri Rashbehari Satpati said that, in his school, he had started with collecting historical and geographical materials of the region.

Sm. Renuka Biswas spoke about the teaching of Social Studies in America. In American Schools emphasis was laid on the influence of the history of the civilization of the world on America and on America's relations with other countries. They invited foreigners, whenever available, to speak to the students. But as Education differed from State to State and teachers had a great deal of freedom for making their own syllabus, there *were great variations in the teaching of Social Studies also.*

In opening the next day's group

sitting Sm. Biswas said that the object of teaching Social Studies was to develop school children into good citizens. To achieve this objective it was necessary to give them an understanding of their own environment, of different types of civilisation and culture, of different ways of living and of the interrelatedness of the whole human race. Such knowledge and understanding was expected to develop new attitudes. By learning about various tribes and the causes of their "backwardness" they were enabled to assess the values of civilization and have a greater sense of respect for customs and civilisation other than their own. Study of different trends of Indian civilisation would bring about a conception of unity in diversity. These objectives could be classified as following :—

- (1) To enable the students to realise clearly the place of the individual in the social and cultural life of the nation and the world.
- (2) To enable them to understand India's relations with other countries of the world.
- (3) To create a feeling of unity in the past and present of Indian society and culture.
- (4) To enable them to understand and respect other people and other countries.
- (5) To enable them to understand the trends of development of

different races and civilisations with their similarities and differences.

- (6) To give them an understanding of the inter-relatedness of history and geography.
- (7) To enable them to understand the causes of social and political change and development.
- (8) To inculcate in them feelings of universal brotherhood and world citizenship.

She added that the interest that the students may take in the subject would depend on the attitude that was brought to it. If the aim was to pass examinations only, then no interest would be created. If the teacher, however, tried to develop their characters then interest would naturally develop.

Sri Rashbehari Satpati said that instruction in Social Studies should begin by social living in the family. This could be gradually extended to the participation in the social life of the village.

Sri Birendramohon Jana gave the following scheme for the development of social consciousness :—

- (1) Preparing a history of the school.
- (2) Organising field trips in the locality.
- (3) Organising field trips to interesting and important places.
- (4) Collecting local rhymes, songs, crafts etc.

- (5) Studying the advancement of human civilisation through gradual understanding of the ways of nature and of mutual interests.

- (6) Inviting people from different parts of India or different countries of the world to the school for talks and discussions.

- (7) Collecting books, magazines, pictures etc. bearing on the subject.

- (8) Arranging for talks by specialists or persons connected with public utilities, social services etc.

- (9) Showing films.

- (10) Organising exhibitions, cultural shows etc.

As it would be impossible for every school to undertake all the listed activities, each could select such items as suited it.

The participants felt that the objectives of teaching Social Studies were closely connected with the those of national and emotional integration. It was felt that the development of judgement, power of analysis and personality traits like consideration for others, cooperativeness, egalitarianism, as well as the feeling of responsibility for society and the state were equally important in both cases.

The need for improving the system of evaluation in this subject was felt. It was said that it should not be confi-

ned only to the discussion of syllabus material but extend to the observation of general conduct and activities, enthusiasm and skill and consideration of others' opinions about the students concerned. Some were of the opinion that the Board of Secondary Education should appoint school teachers as paper-setters for Social Studies because they knew what their students were capable of.

Sm. Arati Bhattacharya said that students today were incapable of deep thinking. They wanted to get away with the minimum work necessary for examinations. They did not want to understand or analyse. She felt that the present system of education and examination and, also, the social background and values were responsible for the present sorry state of affairs.

The following list of activities for developing analytic thinking in students was prepared.

- (1) Questioning by the teacher.
- (2) Encouraging students to ask questions.
- (3) Presenting problems before them.
- (4) Encouraging them to discuss and express their opinions on subjects studied.
- (5) Helping them to clarify their terms and concepts.
- (6) Encouraging them to read out-books and journals.

Materials for helping in such development were listed as following :—

- (1) Examples from history and literature down the ages.
- (2) Pictures from advertisements, calenders etc. bearing on the subject.
- (3) Collections of stamps, coins, dolls, greeting cards etc.
- (4) Books, magazines, films, pictures etc. obtained from various statutory, public or foreign institutions.

The group for social studies devoted some time to the consideration of some problems regarding the teaching of Home Science. They were as following.

- (1) The syllabus was not adequately related to Indian conditions. Equipment and accessories like vacuum cleaners or dinner sets were foreign to most Indian homes while instructions about decorating a drawing room or nursery were superfluous in a country where the majority of the people lived in one-room tenements...
- (2) As there were very few facilities for higher studies in Home Science students did not want to take this subject.
- (3) The school and college syllabuses of the subject did not correlate properly.
- (4) There was a dearth of good books on the subject.

Recorders, — Arati Bhattacharya, Namita Sarkar, Madanmohan Baitalik, Narayan Chandra Maity.

II

Mrs. Karlekar opened the discussion with a statement on the objectives. As there was no time for studying the subject in all its aspects, the approach would have to be restricted to the needs of emotional and national integration.

What was the relation of language to mental development? —Language was the instrument of emotional expression, the vehicle of thought and its transmission and the weapon of spreading influence. It was therefore the tool of education and mental development. The mind of man worked in deep recesses from where the unconscious coloured and influenced the conscious. Language was a limb of the mind through which all its processes could be explored and analysed. This was the relation of language with harmonious personality development which was, in turn, the basis of emotional integration.

A nation's integration depended on a balance sentiment of nationalism. Like human beings nations were also composed of mixtures of good and evil. As Swami-Vivekananda had said there was no perfect nation in the world. There were degrees of development, but no perfection. The ideal of perfection was born in the minds of men through the perception of the great and the good elements in every

nation. A prejudiced mind would not be able to appreciate the different countries. Competitive nationalism, therefore, could never be a basis for national integration.

The linguistic map of India offered a composite picture. The original language of the ancient Aryans gave rise to literary Sanskrit on the one hand and, on the other, different regional languages were evolved out of its colloquial form. This was the thread of unity in the diversity of Indian languages.

English had arrived later as the language of the British rulers. It was an international language. Its contribution to the development of science and general learning was undisputed. It was still the most important living force in expanding the horizons of human knowledge.

The group decided that, of the languages current in India English, Bengali, Sanskrit and Hindi were relevant to the purposes of the current discussions.

The main question regarding English was whether it had denationalised us. This was only superficially true. On the other hand it had helped in the integration of the Indian nation. Contact with English literature and philosophy had inspired Bengali writers to recreate our literature. The

Indian Renaissance of the nineteenth century owed almost everything to the study of English. To say that the study of English would lead to a neglect of our regional languages was an expression of inferiority complex.

English was now being considered as a tool language, but the byproduct of enjoyment in the study of literature was too important to be overlooked. It was this extra something which made English a suitable vehicle of integration. The movement for "Angrezi Hatao" on the other hand, made for disruptive tendencies in the minds of teachers and students.

The main weakness of the teaching of English today was the lack of practical application. Its teaching suffered from verbalism without reference to life situations. The method which worked on a scientific principle of practice was known as the Direct Method. The structural approach to this method was very useful under conditions where the use of English was restricted.

There was some discussion on structures and the stages and ways of drilling as also on various activities and audiovisual materials. Some points regarding the teaching of poetry and functional grammar were then taken up.

In discussing the teaching of Bengali, surprise was expressed at the fact that Bengali students of English in

Anglo-Indian schools should be able to have a far greater grasp on English literature than Bengali boys in Bengali schools had on their own literature. What was possible for one group of boys with a foreign tongue should be far easier for another similar group with the mother tongue. The lopsided syllabus overloaded with grammar prescribed by the Board of Secondary Education was probably mainly responsible for this state of things. The study of literature should have been given far greater importance.

The useless trouble taken in learning the alphabets and the extra-ordinarily heavy and unpractical load of grammar made the study of Bengali uninteresting and difficult. It was wrong to obstruct the growth of literary appreciation by the pressure of grammar. By way of making the teaching of Bengali interesting it was suggested that grammar should be taught inductively, spelling through word-games and quiz programmes and poetry through recitation.

Sanskrit was needed as a source language but the group was of the opinion that the short time study of the language as required by secondary school syllabuses would increase the language load without yielding comparable benefit. The consensus was that while Sanskrit could be beneficial when studied over a considerable period, a little knowledge of it would

be useless. Therefore its importance was almost non-existent to all but students intending to specialise on languages at higher academic levels and should not be made compulsory at school level.

As for methods of teaching the direct method was recommended for English, Sanskrit and Hindi.

(Recorded by Ira Majumdar, Minu Guha Roy, Bisnupada Manna and Mohini Mohan Maity)

Some broad recommendations were made about evaluation. It was suggested that the easy, short answer and objective type questions should be used in proportion according to class and that great care should be taken to formulate the questions specifically and without ambiguity and a complete coverage of the subject and skill area tested should be aimed at.

III

The following points were selected in the group for science :-

- (1) To enquire how science was taught in different schools,
- (2) To analyse the defects in science teaching and find causes
- (3) To devise ways and means for the improvement of science teaching under the existing conditions.

Prof. Mukherjee, who opened the discussion with a few words, said that many of the necessary facilities were not available in schools and would not be in the near future. It was therefore the duty of teachers to teach as best they could under the existing conditions. Further, it was the teachers themselves from whom the answers to their questions should come.

Some of the ways in which the

teaching of science could be made more interesting were listed as following :-

- (1) The chalk-talk method should be avoided.
- (2) The students should be encouraged to make collections of rocks, plants, flowers etc. and use them for reference in Science classes.
- (3) The teacher should spend some time in planning his lessons.
- (4) He should make his students prepare charts, models etc. out of curricular points. For this purpose he should pre-calculate the time necessary for actual teaching and arrange for some extra time for practical work. The class should be divided into groups and each group entrusted with the preparation of one item.

The groups should be given adequate guidance in their work and the apparatus prepared by them should be used in class-teaching. This would not only make the study of science interesting but improve the students' emotional balance by giving them pride in their work and making them feel needed. The materials prepared by students could be displayed in the annual exhibition of the school,

- (5) The students should be encouraged to collect pictures and cuttings of stories and articles of scientific interest from news papers and Journals and make scrapbooks on albums. These books should be taken in at the time of the annual examinations evaluated and the marks added to the general results.

The following were taken down as common problems of science teaching

- (1) The syllabus was confused and too heavy for the time available for teaching.
- (2) Text books generally available in the market did not follow the syllabus.
- (3) It was not possible to show all the prescribed experiments in class because neither the time nor adequate laboratory facilities were available in most schools.
- (5) The School Final Examination,

papers often contained questions on out-of-syllabus topics.

Some of the constructive suggestions prepared as a result of the discussions were as following :—

- (1) It was not necessary to teach the whole general science syllabus in higher secondary schools. The teacher should decide about his teaching items according to the time available. Some of the difficult topics like mathematical calculations could be omitted in this way while some easier ones could be relegated to lower classes.

This method however, would not be practicable in ten-class schools for which general science is an examination subject.

- (2) Teachers often followed, a single text book blindly because they found the syllabus confusing. They should, on the contrary, collect all available sample copies of science text books and use the best portion of each for class teaching. They should also encourage students to read them as "out" books.

- (3) Instead of showing one experiment in each period specially fixed for the purpose. A number of experiments should be shown together in a period specially fixed for the purpose.

- (4) In order to enable science teachers to cope with all extra work entailed in this way, the

Board of Secondary Education should recommend a lesser number of teaching periods for science teachers.

- (5) Teachers of general science in higher secondary schools should have a sufficient sense of responsibility not to neglect it just because it was a "non-examination" subject.

Mr. Mukherjee, in closing the first day's sitting, gave the following suggestions.

- (1) Science Library— students should be encouraged to collect books on science and build their own library. This would help them to develop a sense of responsibility a habit of working in cooperation with each other and a special interest in Science.
- (2) Question Box—students often asked irrelevant questions in class which hampered the progress of the lesson. They should be asked to write down all their questions and put them in a box specially kept for the purpose. The teacher would take them out after a specified period and try to have them answered by the students themselves. This would give the more intelligent some worth while extra.
- (3) Teachers should go on studying continuously to increase their knowledge and keep themselves

up-to-date in scientific information.

On the second sitting of the science groups Sm. Anima Bose of Multipurpose Government Girls' School, Alipore, said a few words about her work as a teacher of science. Her students had their own library which they themselves conducted so efficiently, carefully and with such a sense of responsibility that there was a question box the best questions out of which were put up on the Science Club Board; the best answer given by students were, then, also put up on the Board. Scrap books prepared by girls were used for the annual exhibition of the school. There was a small Science Committee in each class who collected scientific materials pictures and articles and put them up on the Science Wall Newspaper. Each class brought out one such paper each month. If enough time for experiments was not available students of higher classes often worked in the tiffin period.

Mr. Mukherjee then asked teachers to take advantage of the increasing habit of newspaper reading to encourage students to find out the latest scientific information from newspapers and journals. Interesting items collected by students could be discussed in class. Extension lectures by Scholars of science would inspire students to think deeply. Reading about lives

and works of great scientists would also create interest. An annual exhibition or science fair with materials prepared by students themselves would encourage them greatly. Then there should be atleast one excursion or fieldtrip to a place of scientific interest each year. Railway concession and special government grants were

available for such purposes Science Clubs should be established in every school. Students should make scientific equipment and other objects of interest in these clubs under the teacher's guidance. The Central Science Clubs of the David Hare Training College and the Institute of Education for women would help teachers in this work.

(*Recorders-Badal Chandra Maiti, Anil Kumar Mandal*)

LIST OF PARTICIPANTS WORKSHOP ON NATIONAL AND EMOTIONAL INTEGRATION TAMLUK, FEBRUARY 22-26, 1963

ASADTALA BENODE VIDYAPITH

1. Nagendranath Midya

BAISNABCHAK M. C. SCHOOL

2. Amalendu Mukhoti

3. Subhas Ch. Pramanik.

4. Subodh Ch. Guchait

BAJITPUR SARADAMANI

BALIKA VIDYALAYA

5. Nisikanta Kar

6. Sandhya Bose

BYABATTARHAT ADARSHA

HIGH SCHOOL

7. Amalendukumar Gajendra

Mahapatra

8. Bhawaniprasad Gajendra

Mahapatra

9. Panchanan Dey

CONTAI CHADRAMANI

BRAHMO GIRLS' SCHOOL

10. Arati Bhattacharya

11. Gouri Patra

12. Krishna Sen

CONTAI HINDU GIRLS' SCHOOL

13. Sonali Bera

14. Nandita Maiti

15. Asima Roy

DOMARI H. S. SCHOOL

16. Nalinikanta Sinha

17. Gajendra Nath Mehta

18. Sasanka Sekhar Panda

HAMILTON HIGH SCHOOL

19. Bhabendranath Bera

20. Birendranath Jana

21. Barendranath Bera

22. Anil Kr. Mandal

ISMALICHAK MOYNA T. S. B.

VIDYALAYA

23. Badal Ch. Maiti

24. Ajit Kr. Bhattacharya

25. Bhawani Prasad Bhattacharya
KALIKAKHALI VIDYAPITH

26. Sasanka Sekhar Giri

27. Bharati Bhowmik

KANCHI GUNADHAR ADARSHA
VIDYAPITH

28. Pravash Chandra Kar

29. Narayan Chandra Maiti

30. Bhupal Prasad Mandal

KELOMAL GIRLS' H. SCHOOL

31. Subrata Sarkar (Hd)

KELOMAL SANTOSINI H.S.M.P.
SCHOOL

32. Abani Kumar Rakshit

33. Prakash Chandra Das

MOYNA GIRLS' SCHOOL

34. Banalata Mandal

35. Bela Bhattacharya

36. Bhawani Datta

MOYNA PURNANANDA
VIDYAPITH

37. Bishnupada Manna

38. Rabindranath Kar

39. Anangamohan Roy

NAIKURI THAKURDAS
INSTITUTION

40. Jitendranath Samanta

41. Nandadulal Adhikari

NANDIGRAM B. M. GIRLS'
SCHOOL

42. Nilima Samanta

43. Suniti Majumdar

44. Dipti Maiti

NANDIGRAM B. M. T. SIKSHA
NIKETAN

45. Rashbehari Satpathi

46. Amulyacharan Gole

NIVEDITA KANNA VIDYAMATH
(ASADTOLA)

47. Kanak Das

48. Manasi Pradhan

PANSKURA B. B. HIGH SCHOOL

49. Saktipada Ghorai

50. Kishoriranjana Goswami

P. P. HIGH SCHOOL PARBATIPUR

51. Prasanta Kr. Das

52. Asit Ranjan Misra

53. Dabiruddin Ahmed

RAGHUNATHBARI H.S. SCHOOL

54. Khagendranath Maiti

55. Asit Ranjan Pal

56. Mohini Mohan Maiti

R. S. GIRLS' H. S. M. SCHOOL

57. Latika Datta

58. Nilima Nag

59. Bidhubhusan Das

S. E. RLY. GIRLS' H. S. SCHOOL
KHARAGPUR

60. Bina Devi (Hd)

61. Sudha Datta

62. Sadhana Ray

TAMLUK HIGH SCHOOL

63. Chandra Sekhar Maiti

64. Bholanath Sainik

65. Krishnanath Bhattacharya

TULIA SITALA MODEL HIGI
SCHOOL

66. Pranab Kumar Misra

67. Madan Mohan Baitalik

BOOK REVIEWS

SOCIAL STUDIES AND WORLD CITIZENSHIP

by L.F.J. Brimble and F. J. May, Published by Macmillan (1958) 2nd. edition.
Pp. 116. Price Rs. 2'00

The book, as the sub-title suggests, is A Sociological Approach to Education. The following lines from the preface of the book will give an idea of the purpose and scope of the book under report. 'A subject will no longer be important because of its previous status as an academic subject; but everything that finds its way into the curriculum will be included because of the part it will play in fitting the pupils for their task of living successfully' and again, 'The pupil must be brought to realise the oneness of all the subjects he studies and feel it all to be as real as his own personal experiences of everyday life.'

Attempts have been made in course of the twelve chapters into which, the book has been divided to develop two standpoints viz. (1) Development of worldmindness in pupils of today who will be citizens of to-morrow through the following chapters viz. World Citizenship (chap. I), Psychological Problems involved (chap. II), A World Democracy (chap. III), Government of the Community (chap. IV), Literature and World Citizenship (chap. v).

In the subsequent chapters (VI to XI) the subjects—Science, Social

Studies, Geography, History, the Arts, Physical Education, Language have been brought under discussion with an indication of the specific value of each towards the development of that frame of mind in the pupil which is conducive to the acceptance of and respect for citizenship of the World. The integration of the so-called subjects in the school curriculum apparently unrelated has been clearly brought out and the proposition 'oneness of all the subjects' (quoted earlier has been established ; in the final (XII) chapter, Responsibilities of the Teacher, the importance of the teachers' has been emphasised viz. 'making education for world citizenship a successful a process of education.'

The chapters provide stimulating reading and the ideas are presented forcefully.

In the chapter entitled World Citizenship and the Language Problem (XI) a fairly long section has been devoted to the description of ESPERANTO—an international auxiliary language, which is a pleasant introduction to these who want to know a about the genesis of this language and its professed claims.

HISTORY OF THE WORLD

by A. Magnis & J. C. Appel, Published by American Book Co. Pp. 562 appendix pp. 566—570—

World History is now included in syllabus of our schools (both High and Higher Secondary) upto class VII but it is also included in the Elective paper on history in Higher Secondary syllabus. The period of World History from 1763-1950, has to be studied in one of the papers of the Higher Secondary syllabus. The teacher therefore, should have acquaintance with the subject-matter in a measure which must be in excess of what is provided in text books consulted by students themselves. It is expected that every teacher of the subject should read up one or two standard works on the subject by reputed English authors. Prior to his encounter with a formidable looking volume of 500 pages odd of close print, the teacher is advised to make friends with a book like the one under review. The book under report (though voluminous but not formidable looking surely) is full of illustrations in black and colour, maps, time charts and other attractive devices (e. g. Milestones Towards Democracy, Milestone of Living) which pictorially and in language focus the reader's attention to real advances along the road to ascending civilisation. Materials for Testing work are also incorporated

which are not of the hackneyed type.

Events upto 1955 have been included in the work and it is pleasant to meet with sections on as recent events as the Kashmir problem, Independence of Philippines, N. A. T. O. war in Korea and so on.

The rapidly changing panorama of the world has been exhibited in broad but colourful outline in twelve units beginning with Story of our World (unit I) and then in succession The Earliest Civilisations (II), The Greeks (III), The Romans (IV), The World during the Middle ages (V), The Renaissance (VI), The Ups and Downs of Kings (VII), The Uphill Struggle for Freedom (VIII), The New World of Industry (IX), Imperialism, Nationalism & Democracy (X) The World in Turmoil (XI) and the last unit A Warring World in Search of Peace (XII).

The treatment is almost on the plane of schoolboys' understanding and appreciation and it is hoped our teachers will find it pleasant to read.

Ten copies of the book are in the Extension Library and we are able to satisfy ten prospective borrowers at the same time.

(Reprinted from 'Library Service, Extension Service Department, Govt.)

ELEMENTARY SCHOOL HEALTH EDUCATION

Humphrey Jonson & Moore. Publisher Harphar & Brothers, Price—Rs. 6.00.

This book on elementary school health education, written by three experienced educationists, deals, with the many different aspects and problems of teaching the principles of health and hygiene in the school to the very young. As the preface says it is for the teachers to grasp fully the "meaning of child health" and then to find out how this meaning can best be translated into actions & habits.

The most interesting and instructive portion of the book is that dealing with the integration of health education with other subjects in the curriculum. This is all the more welcome since Hygiene is no longer advised to be treated and taught as a separate school subject. The idea of integration has not yet become a familiar one with most teachers. The sooner they realise that health education can be given by every teacher through every subject and in every class the better it will be for the future generations. This book goes

a long way to bring about that aim. Integration of health education with all other school subjects dealt with separately and in details giving concrete examples of class room situations.

Another noticeable feature of the book is the problem approach to each topic which gives the reader a clear idea as to what to expect in a particular chapter.

The lists of references with each topic should be of great assistance to those interested.

A summary at the end of each chapter would have made the book more useful.

The basic problems of health and good habit formation are universal and the difficulties one has to face are common to all parts of the world. Hence this book written for American schools should prove to be of great value for Indian schools as well and should be read by teachers of all subjects.

Sobhana Dasgupta

Review Of Work

The first article in this issue is a rewrite of a talk by Sri Sudhendu Mukhopadhyaya given in connection with our Puja Vacation Course on Social Studies in 1961.

Next, is a report on the five-day workshop on Emotional Integration held in Tamluk from the 22nd to the 26th February, 1963. The flood of patriotic fervour to meet the Chinese invasion of October, 1963 had to crystallise in parmanent values in order to enable the nation to face an enemy who neither retreated fully nor openly repeated violent action, but hung over our heads like Damocles' sword. Education had the responsibility of finding ways and means for moulding the future on abiding foundations and that teachers were not unaware of their duty was proved by the large number of enthusiastic participants at the Tamluk workshop. It is to be hoped that some of the conclusions arising out of the discussions are being used by them in their schools.

To make room for the report of the workshop we have postponed the publication of the reports of the

Summar Vacation Courses till the September issue. These courses were held from the 20th May to the 5th June, 1963 with one hundred and eleven teachers working in four streams, viz-Geography, Bengali, Mathematics and Emotional Integration. In addition to these there were Extension lectures in the afternoons by Mrs. Santi Dutta, Mrs. Paula Echevaria, Dr. Parimal Das, Sm. Renuka Biswas, Dr. Niharranjan Roy, Dr. Hiranmay Banerjee Prof. D. N. Bose and Sri Gour Kishore Ghose.

Reports on these will be gradually published in the later issues.

A meeting of the Advisory Committee was held on the 15th March, 1963 for discussing plans of activities for 1963-64. It was probably because of the cooperation from the inspectorate following this meeting that our house was so full for the Summar Vacation Courses. One of the Inspectors atleast took the trouble of coming and observing our work in her free time. We hope that this cooperation will continue through the future.

Schools which undertook projects

with the cooperation of the Department of Extension Services in this quarter were as follows—

(1) *Ahrampore Jr. and Sr. Basic Schools*—took part in an exchange programme with President Price school Missouri, U. S. A. by contact through Sm. Sadhona Guha of Shakhawat Memorial Govt. Girls' School. The pupils of the Price School have sent the pupils of Ahrampore School a gift parcel of needles and pencils and these children have written letters of thanks in reply.

(2) *Binodini Girls' Schools, Dha-*

kuria, started a programme for the introduction of the Structural Approach of the teaching of English but did not continue with it.

(3) *The Bethune Collegiate School* has undertaken a programme for the improvement of the teaching of English which it hopes to extend into a more complete plan.

(4) *The Holy Child Institute* has developed a series of Clubs the success of which is due more to the enthusiasm of the mother Superior than our help.

Kalyani Karlekar

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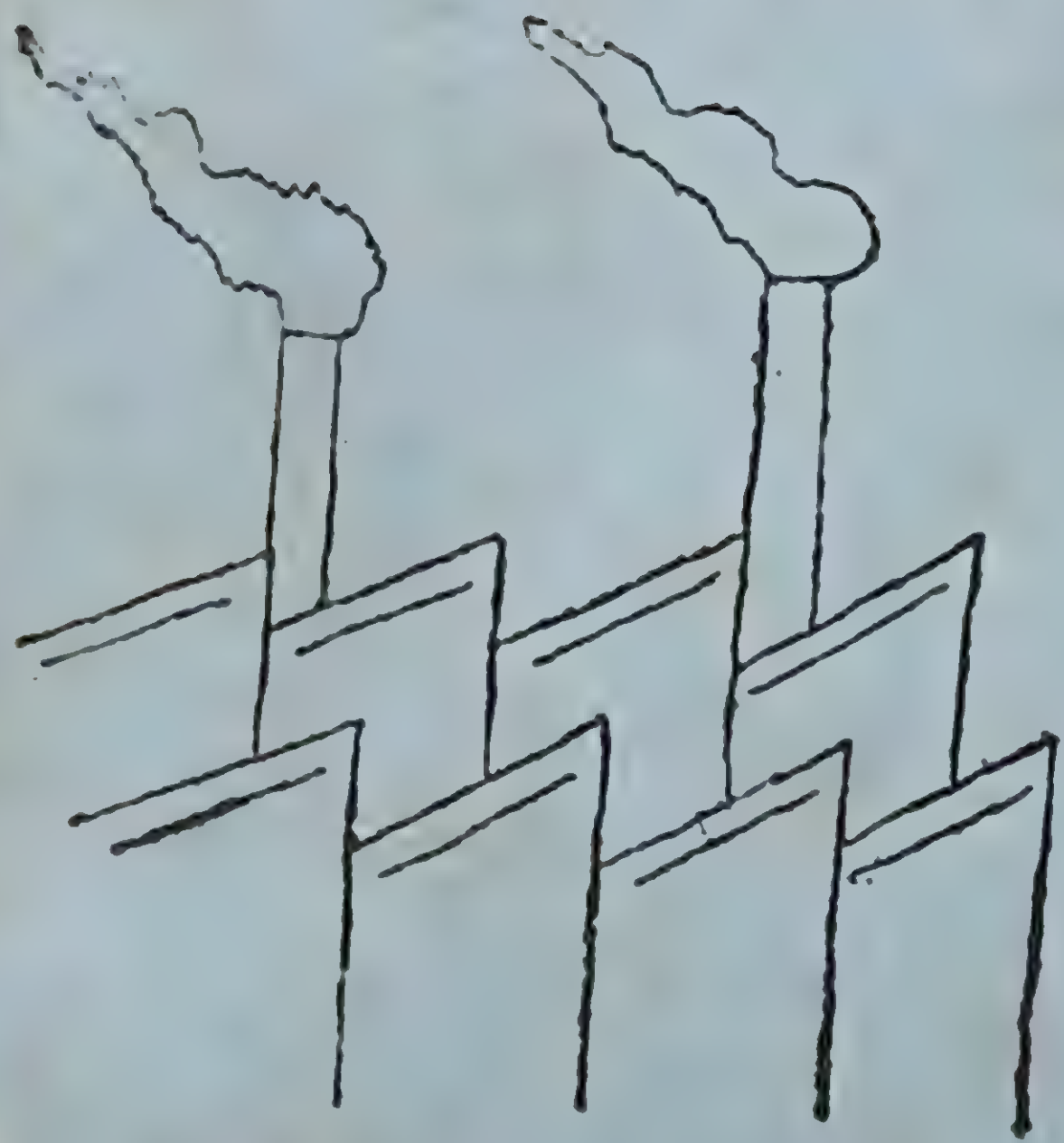
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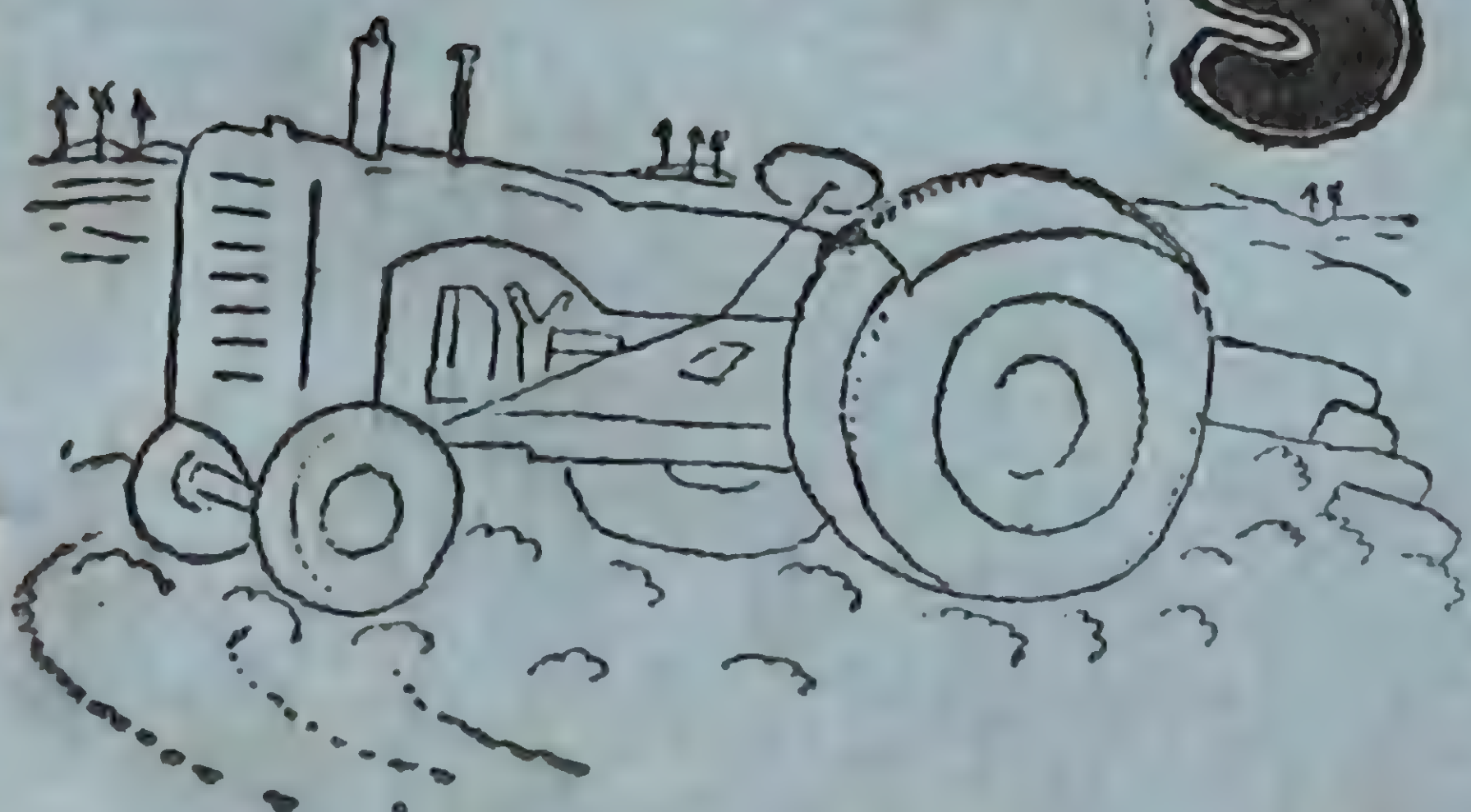
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Teachers' Quarterly

FOREWORD

We are passing through a critical period of transition in the history of Secondary Education in India to day. Those who are concerned with Secondary Education, and also many who are not directly so concerned, appear to have suddenly become aware of the fact that "all is not well" in the state of education today.

In one sense this is certainly a healthy sign. It is right and proper that in a democratic country the public should be actively interested in such vital public matters as the education of their own children. It is indeed desirable that educational problems should be freely discussed and thrashed out, not only in academic circles, but in public forums as well.

The gulf between the school and society should be bridged today and parents should be encouraged to take an active and intelligent interest in the education of their children and cooperate with teachers in this respect. Teachers and parents should sit together and seriously and frankly discuss all educational issues and concrete problems regarding the education of the children.

Public discussions on education as well as debates at more academic levels, sometimes take a controversial turn on different issues. Often it happens that the supporters of both sides in such a conflict are so firmly convinced about the infallibility of their own standpoint that they turn deaf ears and blind eyes to all arguments in favour of the other side. Thus controversies go on producing much more noise and heat than light, until not only the lay public but even workers in the field of education, are completely confounded as to whether change in a particular organisational pattern or in curricula is expected to result in tremendous improvement or complete chaos in the field of education !

(Continued at end of page 77.)

The Development of Reading

by Shanti Banerjee

Reading is a very important tool because it gives us access to the store house of knowledge of the civilized world and it should be cultivated with care. In the United States it finds a very important place and in all the schools in Boston and its vicinity there is a programme for improving reading. Poor reading is considered to be the most important single cause of retardation besides low intelligence. In some schools pupils are grouped for subjects like social sciences according to their reading ability. In the past, high schools and colleges took for granted the reading ability of their students. Now more and more secondary schools and colleges believe that the student's reading ability can and should be improved and they should provide the means for it. It is interesting to note that the lead in developing such programs at the college level has come not from institutions with inferior student population, but from such schools as Dartmouth and Harvard.

In India, teachers, in general, can give little attention to proper development of reading. There are serious handicaps no doubt, but if its importance is properly recognized there is no reason why some improvements in that area cannot be effected. With improved reading ability the pupils would be on their own in acquiring information and less burden on the teacher. The frustration suffered and labour wasted in a conscientious teacher on an apparently intelligent child, unable to cope with the subjects to be studied, may be eliminated with closer attention to their reading ability. Prior to that, physical fitness tests with special reference to eyes and ears must be administered.

Teaching of reading may be broadly divided into 1) preventive cum developmental and 2) remedial. Preventive-cum-developmental programme consists of developing the mechanical skills of reading, i. e.

1. development of a large sight vocabulary,
 2. development of good eye movement habits,
 3. development of oral reading,
 4. development of speed and fluency in silent reading,
- and also skill in reading comprehension, which means.
1. acquisition of a rich, extensive and accurate vocabulary,
 2. ability to grasp the meaning of units of increasing size :- phrase, sentence paragraphs,
 3. ability to find answers to specific questions,
 4. ability to understand main ideas,
 5. ability to understand a sequence of events
- and further,
- 1) the ability to evaluate what one reads,
 - 2) ability to select the materials needed,

- 3) ability to organize what is read, and
- 4) ability to summarize and outline.

In the United States, in school systems where they have kindergarten, the youngsters are trained for reading readiness. The most important factor is to create interest in books. Children coming from good and educated homes are familiar with and generally develop a natural love for books, which half wins the battle. But there are some who are not as fortunate. The teacher has to make up the difference by telling many stories and reading out from interesting books.

The teacher's task is somewhat lightened by making use of readiness work books. Every modern set of American primary readers now has at least one set readiness work books with an accompanying teachers' manual containing suggested lesson plans. These workbooks provide colourful interesting pictures which can serve as basis for description, discussion, story telling and learning new concepts and vocabulary. They also contain graded series of exercises for making comparison, noting similarities and differences and learning to observe left to right directions.

From the first grade onwards the children follow one or the other of the many beautiful illustrated basic reader series accompanied with teachers' manual, exercises and tests to diagnose the defects in reading, improve and evaluate the same. Some examples of areas explored are given below. The child is given a selected passage to read orally and the following is noted : For oral reading :—

1. omitted words
2. substituted words, or parts of words
3. phrasing
4. punctuation
5. words pronounced, that is the child hesitated and then pronounced with the help of the teacher
6. words repeated

Also the presence of finger pointing, unusual methods of holding the book, marked insecurity during reading, unnatural tone of voice, speech defects, signs of visual difficulties, and during silent reading, lip movements or vocalization should be noted.

For comprehension : Questions are asked after the child reads given passages orally and silently.

For example :—

A. Bill said "Look Linda, Rags is not at home. Help me find Rags. He runs away and plays. Linda said, "I see Rags. He is at home Bill. He is in our car.

Questions :

1. What did Bill think Rags had done ?
2. What did Bill ask Linda to do ?
3. Who found Rags ?
4. Where was Rags ?

B. Silent reading :

Daddy said, "Come here Ricky. I want you to see something. It is, something for you. It is a funny big fish. Come and get it.

Questions -

1. Who did Daddy speak to ?
2. Why did Daddy call Ricky ?
3. What did Daddy have for Ricky ?
4. Who had to go and get the fish ?

In the second week of every school year the children of every grade are tested in reading achievements. Some of the standardised tests used for the purpose are :

1. Gate's primary reading test
2. Gate's reading survey—Form I.
3. Gate's reading diagnostic test
4. The Iowa test course
5. Mc. Call :—Crab Standard Test Lessons in Reading Books A, B, C, D.
6. Sangreen Woody test
7. Gate and Pearson—Practice Exercises in Reading

At the end of the first grade the I. Q. is also tested. In most of the schools the reading achievement tests are administered again in May. Children found below average or in the case of schools catering for higher ability group, (generally private), below the class average in reading, inspite of average mental ability, are marked as cases for remedial reading. With the rest, the normal reading programme is continued.

It is known to every teacher that there will be different degrees of achievements in the class even after the elimination of the below average ones. One of the ways to provide for individual help as far as practicable is to divide the class into smaller oral reading groups and ask them to read groupwise. The reading matter should be of some length and not just a few lines. After half the period of oral reading the better readers may be asked to do some silent reading of the supplementary readers on their own. Meanwhile the teacher can help the weaker ones individually. A good collection of graded supplementary readers is made available to the class. Or they may work with the S. R. A. materials.

The graded reading materials prepared by the Scientific Research Association, better known as the S. R. A. Materials are very helpful for improving reading on an individual basis. The material is carefully graded in difficulty to suit pupils from grade III to grade IX. It consists of reading matter accompanied with ample exercises and tests.

The different grades of difficulty are identified by different pretty colours. With the help of these materials a child can proceed by himself according to his own pace.

In the lower grades more attention is given to develop the child's comprehension than to increase speed.

In the high school i.e. grades IX-XII, or X-XII, as it happens to be, the reading programme is taken up more seriously. The pupils are divided according to their reading achievements.

In some schools all of them are required to take a course of six weeks ; it varies from school to school. In others there are two different programmes one remedial, meant for the backward ones and the other developmental, for the college bound pupils. The importance of these courses cannot be exaggerated. Thus the weaker readers are helped to complete their high school course successfully, which would be difficult without this extra help in reading. The better ones are more prepared for their advanced study in college where they will be required to read volumes and volumes.

In high schools the emphasis is on both speed and comprehension it involves vocabulary, dictionary skills, getting information, learning to skim, critical reading which includes identifying character traits and emotions through what they say, using content clues to discover setting, judging the main idea, learning organizational skills, etc.

Speed will be different in reading for different purposes ; for example :—

Skimming :—to find a reference ; locate new material ; to answer a specific questions ; to get a general idea.

Rapid Reading :—

Work-type : to review familiar material, to get the main idea or central thought or to get information for temporary use.

Recreational : to read informational plot for pleasure or relaxation ; to re-read familiar material.

Normal rate : work-type : to grasp relation of details to main ideas, to read material of average difficulty.

Recreational type :—to appreciate beauty of literary style, to read with the intention of later retelling the story.

Careful rate :

Work type ; to master content including details, to evaluate material, to outline, summarize, solve a problem.

Recreational type : to read material with unusual vocabulary or style to judge literary values.

Speed is increased by equipment such as reading accelerator, an electrically operated machine, which is essentially a metal sheet sliding down a frame, the reader is spurred to increase his speed and also he cannot regress. A sheet of paper sliding down the book serves the same purpose, though crudely.

Stachistoscope is another electrically operated apparatus used to increase the eye span. Words, phrases and digits of gradually increasing lengths are projected on the screen for fractions of minutes and thus the eye is trained to catch them. The same apparatus made of cardboard and paper and manually operated is also available and can be made.

There are several books for teaching the various aspects of reading,

Winning Words—Henry I. Christ

High School Reading Book—Caughman and Mountain.

How to become a Better Reader,—Paul Witty

S R.A. Readers

—Published by the Science Research Associates

A Programme for Effective Reading—Guiler and Colman.

Senior English Review Exercise—Earl F. Woods,

Be a better Reader. This deals with skill development in reading literature history and geography, science and mathematics, study type.

Also there are several mimeographed sheets carefully prepared. Teaching proceeds with testing.

The remedial reading programme is not very different. Only it is prescribed for those children, whose reading achievement falls short of their Mental Ability.

One may wonder why a child with normal or higher mental ability is not able to keep up normal pace in reading. There may be one or more reasons involved in a particular case and the most important ones are as follows :—

1. lack of reading readiness,
2. physical handicaps,
3. emotional handicaps,
- 4 accidental interference with learning, namely disruption of a pupil's progress by frequent or prolonged absence or by change of schools.
5. Poor teaching of the previous teacher who failed to notice and correct. Difficulties while they are new are minor, allowing them to grow into severe and persistent defects, and also by assigning work which is beyond the capacity of the child ; using disparagement and sarcasm as forms of motivation. These have to be guarded against, and removed where possible.

Remedial reading has to be taken care of by specially trained teachers. More individual help is necessary. It requires great patience which is of course, more or less true of all teaching. Another important factor, on which success depends a great deal is to find out the pupils' reading level and to start right from there, however low it may be. It is absolutely meaningless to try to push him. At every grade after the reading achievement tests, the below average pupils are put into remedial reading classes, where they are given diagnostic tests to find out their particular areas of difficulty, and are treated accordingly. In some schools they separate for special lessons during the reading classes only, and sometimes the grouping is done according to reading ability, irrespective of grade levels. In some public schools systems, they give remedial reading classes in one school in the locality and the children are transferred to that school for the required period. There they are taught mostly in the skill of reading by a specially trained teacher. The other subjects are also not lost sight of.

In India, though perhaps very few of the materials required for effective reading programme are available and special training for the purpose is lacking, yet considering its extreme importance educators should take up reading programmes and however crudely it may work in the beginning there is no doubt that with time and experience materials will develop.

The reading achievement tests will have to be constructed and standardised. Graded reading materials and graded text books will have to be developed. Until dependable reading achievement tests are available the teachers' estimate of the pupil should be accepted. In fact it has been proved that the estimate of experienced teachers correlate very closely with the

tests. The pupils requiring remedial reading should be spotted out and helped individually. This will save the frustration of both the teachers and the pupils. This will be more and more a necessity with the introduction of free compulsory education for all. At the moment perhaps remedial programme at the high school level, i.e. classes IX, X, XI will not be necessary, because of our system of strict examination and promotion from class to class. But developmental reading will be very useful for the college bound pupils. Reading should be enriched at every stage and the skills involved should be carefully taught.

Note : SM. Shanti Banerjee is the Head Mistress of Sakhawat Memorial Govt. Girls' Multipurpose School and has returned recently from a tour of the United States of America on a Teacher Development Grant from the United State Education foundation in India.

FOREWORD *(Continued from page 71.)*

We feel that we teachers should take an active interest in the new educational developments that are being proposed in India today. We should try to comprehend different issues rationally,—critically discussing the pros and cons from all angles and taking up sane and well balanced positions. We should influence the public towards intelligent and reasonable opinion, rather than be ourselves swayed this way and that by extreme viewpoints.

On the other hand, we teachers must realise today, more than ever before, that no new organisational pattern or changes in curricula and text book can result in any real improvement in education, unless supported by sound teaching and proper evaluation in the schools.

We are happy to note, in this connection that, while controversies on various issues go unabated, many schools have set about to improve the actual work in their own institution with a firm determination and are achieving concrete results that are indeed heartening.

Some are experimenting with new methods of teaching one subject or another making good use of the pupils' initiative and participation. Others have organised hobby clubs, literary societies and other cocurricular activities in such a way that the added enthusiasm and intellectual development of pupils is improving their curricular work as well. The coordinator of our Extension Service Department not only gives regular advice to several schools that have taken up such projects, but often concrete help and guidance as well. We would be happy to find more and more schools coming forward with similar programmes of work.

Nalini Das,

Summer Vacation Courses—1963

The Summer vacation Courses for 1963 were held from the 20th May to the 6th June with one hundred and seven teachers working in four streams—Geography, Mathematics, Emotional Integration and Bengali. Reports on the work of the first three streams have been given below and that of the Bengali group will appear in next year's Sravani.

The groups worked separately daily from 10.45 A.M. to 3.30 P.M. followed by extension lectures from 3.30 to 4.45 P.M. These lectures were delivered by Sm. Santi Dutta, Mrs Paula Echevaria, Dr. Parimal Das, Sm. Renuka Biswas, Dr. Niharranjan Roy, Dr. Hiranmay Banerjee and Sri Gour Kishore Ghose.

Group 1—Geography

The group for geography worked under the guidance of Sm. Indira Das, Lecturer, Institute of Education for Women while Sm. K. Dutta, Lecturer Hooghly Govt. Training College and Prof. K. S. Gupta of the Education Department of Calcutta University acted as resource persons for various aspects of the work. The thirtytwo teachers who had readily sacrificed part of their summer vacation to prepare for the improvement of teaching in their schools amply proved the need for more geography offerings by Training Colleges.

The work started with a discussion on different problems in the teaching of the subject. Each teacher entered her own major problem on a list which was screened by Sm. Indira Das. Discussion opened with the routine question—"What, in your opinion, will help you most?"—by agreement amongst teachers areas of help required were classified under several broad heads. The participants also organised their own observation of daily weather, making of cartograms, models and apparatus showing interpretation of mathematical geography (viz time and longitude.)

Work on the teaching of physical geography started with a talk on "Geography of the Daily Weather Report" by Sm. I. Das. Amongst the learning tools used for creating a proper environment, developing skills in the use of meteorological instruments and gaining geographic understanding of daily weather report were recording of maximum and minimum temperature, wet and dry bulb, thermometer and barometer, graphic representations of recordings, preparation of isobar maps of India from given data etc.

Another area of the work was initiated by a lecture on—"The Riverian Land Sculpture" by Sm. K. Dutta. The Audio-Visual Department of the Institute assisted by projecting selected filmstrips exhibits and study prints. filmstrip on features of river sculpture and pictures of various types of clouds were used for the purpose.

Concluding lectures on "The Use of Maps, Graphs, Statistics and Pictures" were delivered by Sm. I. Das and Prof K. S. Gupta. The main point in this subject was the creation of interest through the use of the tools. It was agreed that maps provided the geographic back-ground of a region and graphs and statistics threw a lot of light on the weather and climatic conditions of a place. Facts about exports and imports, amount of crop production could be made very clear and interesting through graphic and statistical representation. Pictures were substitutes for actual view and could be used to give an accurate concept of the landscape and other natural phenomena. Being more realistic than verbal descriptions these materials and techniques could create a lively interest in Geography in students.

The participants did some practical work on cartographic projection and made papier mache models and apparatus to show relations between time and longitude and prepared cartograms from data. In this way terms and concepts about terrain features were correctly related to models.

Some library work was required of the participants. They searched for materials that would help them to solve their problems and prepared short notes on them. Their work was evaluated on the following criteria—"Does it contain good geography?"—"Have the reference materials been intelligently sorted?"—"Will it help to meet their needs" etc, also on the basis of the quality of the work presented, knowledge shared with class and the interest displayed. The valuation of individual work was graded at three levels A—Very-Good, B—quite good and C—fair. The quality of both individual and group work was found to be very high.

The growing contribution of a proper study of geography in furthering emotional integration was taken up. Learning about geographical interdependence of different parts of the world and the binding force of physical environment as the basis of the need of inter-area co-operation led to understandings conducive to the development of integrative attitude and skills for co-operative living.

(Condensed from a report by Sm. Indira Das)

Group II—Mathematics

The work in the group for mathematics began with statements by participants of the difficulties experienced by them while taking classes on some of the topics. Prof. S. P. Mukherjee and Prof. B. Gupta conducted the discussions and gave some suggestions.

Prof. Mukherjee dealt with the following topics (a) Teaching of Geometry. (b) General Methods of Teaching of Mathematics, (c) The Importance of Home work and Class work in Mathematics, (d) Some causes of Backwardness in Mathematics and Motivation in Mathematics and (e) Elementary Ideas of Statistics.

According to him pupils should be given scope for independent thinking while being taught Geometry, they should be led to express their views and teachers should help with suggestions, questions and concrete illustration. Pupils will become discoverers and adequate emphasis should be placed on the drawing of diagrams. Riders should be given after the presentation of a lesson.

While discussing problems of the organisation of the teaching of Mathematics he was of the opinion that only competent teachers should be allowed to teach the subject and that

teachers should hold discussions amongst themselves about the syllabus and the arrangements of topics in order to avoid waste of time through repetition. The total number of working days should be computed and the topics should be adjusted accordingly. The rates of progress should also be discussed and weekly and monthly tests should be taken if possible. The school authorities should supply useful mathematical instruments. Untrained teachers should be guided in their teaching by trained teachers.

Prof Mukherjee felt that some of the causes of backwardness were the abstract way in which Mathematics was taught, lack of proper drill work and the absence of friendly relations between teachers and pupils. Promptness in making the sums was one of the ways of motivating the pupils to work them out. A record of classwork should be maintained and teachers should help the struggling and appreciate the diligent pupils. Frequent time tests and exhibition of specially meritorious work should be arranged.

Prof. B. Gupta discussed topics of Arithmetic, Algebra, Trigonometry and Coordinate Geometry and also the teaching of Elementary Mechanics. This discussions included— (1) Ratio and Proportion. (2) Mensuration. (3) Logarithms. (4) Surds and Indices and (5) Simultaneous Equation. She was of the opinion that sums for class and homework should be given in graded order of difficulty and complicated problems only to those who were above average and interested in them. Problems should be taken from real life as far as possible and proper drilling should be provided for. She also emphasized the importance of making a scheme of lessons.

She said the problems on the unitary method such as of "time and distance", "pipes and cisterns", "time and work" etc may be discussed while teaching Ratio and Proportion because they are also examples of proportions.

Mensuration was the application of Arithmetic to the geometrical aspects of concrete things. Elementary examples on circles, cylinders etc. should be taken from real life and proper diagrams and models should be used. The connection between the circumference and the radius of a circle should be made clear through experiments. Hollow models of cubes, rectangular solids and prisms, cylinders, hollow square pyramids etc. might be made from tin-plates or cardboards. Volumes could be found by filling them with sand or water. The area of the surface of a cylinder could be found by removing the top and bottom of a hollow cylinder and forming a rectangle by cutting the cylinder vertically and flattening it.

The idea of logarithms should be made clear by considering various examples. Special consideration should be made for cases where O is the base. A lesson should be developed (1) by introducing and using log tables and (2) from the rules of indices, discussing the necessary formulae for logarithms. (3) The uses of logarithm in (a) simplification and (b) solution of equations containing uncommon indices should be made clear with the help of suitable examples.

While teaching Trigonometry the following considerations should be made.—

- (a) According to the definition of Trigonometry it is found that it is related to angles. The idea of trigonometric angle should, therefore, be made clear to the pupils. The point of difference between a geometrical angle and a trigonometrical angle should be explained.

- (b) Suitable diagrams figures, tables, charts etc should be used to create interest.
- (c) Applications of trigonometry for surveying of heights and distances, its use in astronomy in determining the distances of heavenly bodies like the Sun, the Moon and the stars should be discussed. Some charts should be used in this connection.
- (d) Models of instruments for measuring angle of elevation or depression may be used. Models of instruments such as sextants or theodolites may be made by pupils.

Coordinate Geometry may be introduced after pupils have got a thorough knowledge of graphs.

Teachers should not depend on text books only for selecting exercises for classwork. Suitable exercises may be prepared by them for the purpose.

The participants framed some questions during the workshop and then discussed them.
(Recorded by Gita Chowdhury and Sulekha Chakravarti and condensed by Prof. Bijaya Gupta.)

Group III—Emotional Integration

Dr. Suhashi Ghosh, Miss Runuka Biswas and Sri Sukumar Mitra acted as resource persons for this group.

The work of the workshop began with an introductory talk on various aspects of the problem of emotional integration by Miss Renuka Biswas.

The deliberations of the workshop included a couple of special talks by Dr. Suhashi Ghosh on the psychological aspects of emotional integration: Human behaviour is a complex of emotion. Psychologists are not unanimous in their description and explanation of emotions. It is however commonly held that emotion is "a complex state of organism, involving bodily changes of widespread character—in breathing, pulse, gland secretion etc.—and on the mental side, a state of excitement or perturbation, marked by strong feeling, and usually in impulse towards a definite form of behaviour. There is a great variety of emotion. Now-a-days emotions are being studied by psychologists as scientifically as possible, and a number of machinery such as Electro-cardiograph, sphygmograph, Pneumograph and Lie Detector are widely used for that purpose.

Building of character being one of its fundamental aims, education is essentially a process of training emotions. Now, emotions developed and organised round an object or person or idea are known as sentiments. Thus we speak of patriotic sentiment, religious sentiment, moral sentiment, aesthetic sentiment, filial sentiment and so on. The master sentiment however, is the self-regarding sentiment. Emotional integration is the orchestration of various sentiments to foster steady, consistent and socially-oriented patterns of behaviour in individuals. This is and can be achieved in the family, school and club. We often refer to terms like growth of character and integrated personality as indicating the fulfilment of the aims of education.

At the moment India's great malady is a general lack of emotional integration among the people, at all levels of the life of the community, among all groups, big and small.

History and tradition have constituted India into a nation of diverse elements and mutually exclusive groups, which indeed has always impeded political cohesion and social integration of the community. The life of the community is torn between all sorts of narrow "isms"—casteism, communalism, linguism, provincialism and so on, which have confused and blurred the vision of a national community.

It is obvious that the answer to the problem is better and a comprehensive education, which however must begin from the elementary stage and must be provided as much at school as in the family and other associations.

The present workshop dealt with the problem of emotional integration mainly as it concerned the school. At school emotional aberrations among children of all ages are noticeable in various forms. Non-cooperation, jealousy, bullying, habitual lying, truancy, disobedience, smoking, destruction of school property, late-coming, inattention to studies, selfishness, parochialism, sectarianism are just a few from the list. All these and others, too, if not dealt with timely and properly, are certain to obstruct the development of the child's character, and to prove, ultimately, sources of social evil.

The workshop were unanimous in the view that though at the moment in our country the school condition in general is not conducive to the proper education of the child, and the school can influence the development of the child much less than the family, much can still be done at school to train the emotions of the child so that he can develop into a good individual, a good member of the family and a good citizen.

A point which came up for special discussion was the teachers' conduct at school and outside it. The workshop held that the teachers' conduct although itself constituting a vexed problem, must be exemplary, and that a programme of emotional integration must include a programme for the teacher.

The workshop made the following suggestion which may be considered in framing a programme of emotional integration for schools.

- a) The most important thing is that the school must be made attractive to the pupils in various ways, without which a few basic sentiments such as love for, a loyalty to and a sense of pride in being associated with the school—all conducive to emotional integration, cannot be developed in the pupils.
- b) The curriculum work of the school must be done thoroughly and conscientiously.
- c) Discipline should be maintained without repression.
- d) Contact with the parents is essential—a parent-teacher association is not difficult to organize.
- e) The school work may begin with an assembly of pupils, held in an organised manner.
- f) Birthdays of eminent Indians, especially those who in various ways contributed to the greatness of the nation—past and present, may be celebrated at school with due solemnity.
- g) The pupils must learn the national anthem and sing it on appropriate

occasions with all seriousness.

- h) Social education such as keeping the school clean, moving in orderly manner, queueing up before the school canteen or while boarding the school bus etc. and various cooperative activities connected with the curricular and co-curricular work of the school must be fostered.
- i) A school court may be organized by the pupils to deal with difficult fellows.
- j) Each class can easily bring out a manuscript magazine of its own at least once a year with the help of the class teacher and the art and craft teacher.
- k) School hobby clubs may be organized.
- l) School reports, exhibitions, plays, exercises etc. are held in almost all schools regularly every year, and they provide an opportunity to develop in the pupils such character traits as leadership, cooperation, sense of duty and responsibility, organising ability or so on.

(Reported by Sukumar Mitra)

Book Review

Imagination by Dr. Harold Rugg

Foreward and Editorial Comments by Dr. K. Benn

Harper Brothers, New York.

Dr. Harold Rugg is one of the most distinguished and influential pioneers of progressive education in the U.S.A. His research work in creative education is perhaps less well known, but certainly not less important.

"Imagination"—the volume under review—is the result of thirty years of study. It is based on sympathetic observation of free creative work in schools and development of children under the guidance of genuine artist teachers; study of the work of two hundred creative artists in various fields—painters, sculptors, writers, illustrators composers, theater directors etc; observations on aesthetic and intellectual creation by well-known artists and scientists, theories of imagination formulated by thinkers in different centuries and various countries of the world; and finally, an attempt at a comprehensive theory of the nature of creative imagination. The work is unfortunately, incomplete, and therefore, inconclusive; but even so, its importance can hardly be overrated. It will perhaps be sufficient to say that this book has thrown much light on the actual psycho-physiological processes involved when in one brilliant moment there is a sudden veering of attention, a consequent grasp of new dimensions, and a new idea is born. No future research work in this field will be complete without reference to this volume.

In the first part of the book the author describes the creative act in man. He seeks evidence from recognised creative men in various fields of music, literature, art and science. While there is some divergence of opinion regarding details, there appears to be much consensus of opinion in basic facts. On the whole, while "artists" treat facts as stimuli for imagination, "Scientists" use imagination to coordinate facts. But in either case imagination is the instrument of discovery, or, in other words, "discovery is imagined conception." Many creative artists and thinkers have described the state of mind favourable for creation as "off-guard," "relaxed" and "receptive to messages." While a great deal of conscious preparative work goes into any creation of value, the actual creative act involves "a dynamic formative power," which is not used deliberately by the conscious mind, but appears to arise from the depths of the subconscious. According to Dr. Rugg the requisites of the creative act are "a continuous flow of perceptual experience," "a continuing flux of imagery pervading the entire conscious, unconscious continuum," "motor adjustment" and an "ordered conceptual content of the mind."

According to Dr. Rugg conventional education relies entirely on the data of reality oriented thinking, neglecting the imagery material or artistic thought. But the "stuff of the creative mind" includes all—percepts, motor adjustment, images and concepts. The elements are not static but there is a continual "flow of electrical and chemical movement" underlying them.

Man lives in two worlds.—viz, the external physical world of other men and events and inner psychophysical world of sensations, images and ideas. On the one hand the self of a man is the very focus of his being, each individual seeing and feeling the world in his own way, on the other hand, culture-patterns and mores of society guide the thoughts and feelings of men.

Creative minds rise above the pressure of society and culture to a large extent. Dr. Rugg has described form in nature and art in some detail, as every act of creation requires form and expression.

In the second part of the volume. The author has discussed "ways of releasing the imagination." He attaches much importance to "transliminal" or "off-conscious" mind-body functioning and considers it to be "the creative centre of the conscious unconscious continuum."

In this connection Dr. Rugg has made a critical study of hypnosis and regards the light trance (but not the deeper) to be part of the creative mind. Some artists have used certain drugs as aids to their creative activity. The reality-principle is relaxed under hypnosis as also under the influence of drugs; the power of internal and external censorship is reduced.

In another chapter Dr Rugg describes the ways of "releasing the mind that produce the illuminating flash" discovered by wise men of the East three thousand years ago. "In China this way into the quiet mind was known as Tao, in India as Yoga, in Japan as Zen. The oriental literature on the subject, that describes "the path to the very verge of the unconscious, and hence to the transliminal antechamber of the mind" should be carefully studied today in the light of modern science. Dr. Rugg is convinced that the "ancient wisdom of the East" has much to contribute. He is also of the opinion that these doctrines support and corroborate his own ideas on the subject.

Western mysticism has been described as "the Tao of the West." Dr. Rugg quotes profusely from modern authors to show that Western mystics also emphasise concentration of attention, relaxation and finally illumination and their theories bear a strange resemblance to the works of Patanjali on Yoga and Zen in Japan on the one hand, and modern scientific psychology on the other hand. This aspect of modern psychology has however been one of its neglected aspects. According to Dr. Rugg much more emphasis should be placed upon the cultivation of the powers and products of inner processes of imagination, contemplation and intuition than is done at present.

In dreams and day dreams also there is freedom in the off-conscious levels of the mind. This freedom means the power to create new forms, but it also means the possibility of distortion, (which is amply exemplified in our dreams and fantasies). Creative imagination must always "go beyond the normal and conventional in providing new orientations new imagined conceptions, new hypotheses."

The third part of the book formulates a theory of the creative imagination which unfortunately, could not be completed by Dr. Rugg. It is a theory of the whole mind, including the conscious-unconscious continuum. It takes into account the fact that every human response is a total, integrated, organic response, including both the psychological

and the physiological. It recognises both the intellectual way of logical thought and intuitive knowledge with a bias on feeling. The actual act of discovery is to be distinguished from problem-solving or verification. Here the organism is self-directive and active and not just re-active. Creative thought is felt thought—rather than verbally reasoned thought.

Dr. Rugg compares the action of the human brain to that of an electronic computer at some length. He also discusses symbolic operation and transformation in mental functioning. But he did not have the time to develop these ideas fully and bring them into harmony with one another.

Modern electronic computer can perform wonderfully doing so many things so much better and faster than man. But while both man and machine solve problems and answer questions, only man can state a problem and ask a question. The Machine can solve only those problems, the data for which have been coded and built into the machine by man. It is only man that can create. One of the most revealing clues to the nature of creative activity is the capacity of the mind to turn its fantasy stuff into meaningful concepts and symbols. In fact symbol and meaning constitute man's world far more than sensation. Each concept is a linguistic term epitomizing "bodies of concrete meaning, arranged in deepening, expanding feelings of scope and interrelationship." Here the word "feeling" is used by the author as a general, over-arching phrase,—"a primal awareness taking place in the organism as a whole", as distinguished from thought, which is confined to the conscious level of the mind. According to the author "feeling is the matrix of thought." This feeling and its organ, gesture are believed to play basic roles in acts of creation and discovery.

Finally Dr. Rugg comes back to the original question—"what is the nature of the act of creative thought when, after prolonged confusion, in one moment there is a sudden veering of attention, a consequent grasp of new dimensions, and a new idea is born?" According to the author, while logical thought is the essence of verification, discovery requires a different orientation, which is described as the "feeling mood." "There is a fertile border state between the alert, conscious problem-solving mind and the receding depths of the unconscious. "Every creative art arises from an autonomous, forming process below the threshold of awareness.

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According to Dr. Rugg, a proper comprehension of creative imagination should have far reaching effects on our modern theories of education. One of the requisites of creation and discovery is copious and ordered information and intelligently enquiring mind. But that is not all. There must be freedom—not only from external restrictions, but also from regimentation of thought. The "inner freedom of the relaxed threshold mind of intuition" is an essential pre-requisite of discovery. This "quiet mind" requires concentration of attention. In the modern American School, in fact, in the modern American civilization itself, there is over-emphasis in the opposite direction, which Dr. Rugg describes as "go getting, activity—for activity's

sake." The school must develop sensitivity, openness of mind and persistence,—qualities not always sufficiently appreciated.

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The perpetuity, even the survival of our civilization depends, in some large measure upon finding a valid solution to the problem which Dr. Rugg was struggling to clarify and solve" says Dr. Benne in the preface "We have depended upon chance rather than design" in the past and individuals have created "through processes and conditions not of our own deliberate making." We have neither comprehended nor aided such processes and conditions. But can we afford to depend on chance in the future also? This is a problem which has to be considered very seriously by modern thinkers and educationists.

Nalini Das.

PHYSICS—D. C. Heath & Company, Boston. Indian Edition Published by National Council of Educational Research & Training, New Delhi, 1962. Price Rs. 8'00

This book has been edited by the P. S. S. C. of U. S. A. in accordance with the new approach to Physics as advocated by them. This method is gradually gaining popularity in the U. S. A., and some schools have already adopted this method of study. It is a very original approach and interesting too if properly handled. But this course needs a special set of apparatus and not the standard and usual ones. These apparatus, as far as I know, are not yet available in India, But some of them can be made to order, as we are trying to do—as they are essentially simple in nature.

Besides the special apparatus, the P. S. S. C. Physics course has to be supplemented by a set of specially made films— without which many concepts are not easy to make clear to school children.

In the U. S. A. special training is being given to teachers to enable them to handle this course.

A teachers' guide is available with this book and should be available to teachers if this book is used.

The P. S. S. C. Physics is an excellent book of reference and should be kept in school libraries & referred to by teachers teaching elective Physics course in schools.

Sobhana Dasgupta.

The SYLLABUS guide for GENERAL SCIENCE for Classes 1—VIII is published by the National Council of Educational Research and Training New Delhi, after prolonged discussions and seminar with a number of Teachers and Educationists from all over India, Price Rs. 2'25 n.P.

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(contd. in page 88)

Review of Work

This was a quarter of concentrated work for schools and a comparatively scattered one for us, in so much as, instead of drawing the teachers to our campus we went out to schools to work with them.

Our last visit to the Ahramapore Basic schools was made in July to photograph a complete working day for them to send to their American pen-friends.

We visited the hobby clubs in Holy Child Institute in July and August and paid special attention to the "English Club." Impromptu dramatics was used to give free practice in English speech to children.

A few experimental lessons in Bengali were taken in class VII in Loreto, Entally. The general report had been that children did not take any interest in studying Bengali as a second/third language and found it extremely difficult to learn the language. The Co-ordinator found that—(A) the text book used was very uninteresting and completely out-of-date, (b) the alphabetic and grammatical approach to the teaching of Bengali as adopted in the school was unsuitable, not only for the teaching of the second/third language, but for any language-teaching whatsoever. She had taken five lessons with pictures and rhymes and plenty of pupil-activity and noticed an immediate change in student attitude and classroom atmosphere and is convinced that if free and is creative teaching methods are adopted in this and other non-Bengali schools the achievements in the teaching of the State language can be completely revolutionised.

The Co-ordinator took three lessons in oral English in Chetla Girls' Higher Secondary School and it has since been decided that such lessons will be systematically undertaken by teachers themselves, in 1964, from class VI upwards.

The usual annual project on Social Studies was undertaken at the Multipurpose Government Girls' School with the help of the students of the Institute. The subject for the study was—"Calcutta and its Industrial Suburbs." A series of four double-periods were taken in this connection.

One good news to report in this quarter is that Sm. Shobhana Dasguta who is in charge of the science Department of the Institute and the Sponsor of its Central Science Club, has returned from a year's stay in the U. S. A. on a teacher-exchange programme. She has come equipped with fresh experience and infused new life into the Science Club which had been languishing in her absence. Three meetings of the club were held in the quarter. In the meeting held in July Mrs. Dasguta spoke about her experience in the States. In August Mrs. Sandhya Sur spoke about the training course for Science-Teachers held at Hyderabad during the Summer Holidays and showed a large number of biological specimens collected and preserved by her. In August, Sri P. M. Neogy, now of Birla Museum, delivered a lecture on "Model Making" which has led the members to plan for a training course on the subject some time in the near future.

The Rains Term Programme of the Bengal Women's Education League was observed through July, August and September. Lectures were held on the following subjects on alternate Saturdays—

- 1) Teachers' Role in Curriculum Construction.
- 2) Emotional Integration.
- 3) Problems of Teaching English in Primary Schools.
- 4) Teaching of Bengali in Primary Schools.
- 5) Teaching of Bengali in Secondary Schools.
- 6) Whether and How the Principles of Basic Education.
can be Adapted to Our Primary Schools.

A meeting of the Advisory Committee was held on the 7th August to plan for a programme for the Puja Vacation Courses. It was decided that applications should be called for four subjects and courses should be held in the two for which the largest number of applications were received.

Kalyani Karlekar.

(Contd. from page 87)

The guide is fairly exhaustive and covers all topics which should be included in a general science course for these classes. The breaking down of major concepts into subconcepts will prove to be of great assistance to teachers and will also be a great time saver.

The sort of guide syllabus is of invaluable help to teachers of mediocre ability and of limited imagination and with a limited time, but for teachers of higher calibre this kind of syllabus guide will be too rigid leaving little scope to exercise their imagination or ingenuity,—Too much uniformity in teaching may not prove to be altogether good.

But for the present, when the standard of teaching is so extremely low and when good text books are rare, this guide syllabus will be of the greatest help and assistance to teachers.

Sobhana Dasgupta,

SUBSCRIBE TO—

“SCHOOL SCIENCE”

A quarterly journal for school science teachers Published by the Department of Science Education.

National Council of Educational Research and Training,
114, Sunder Nagar, New Delhi.

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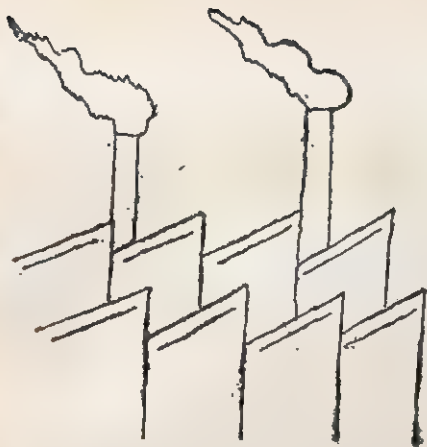
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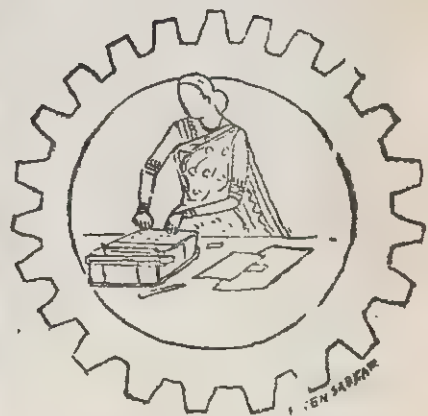
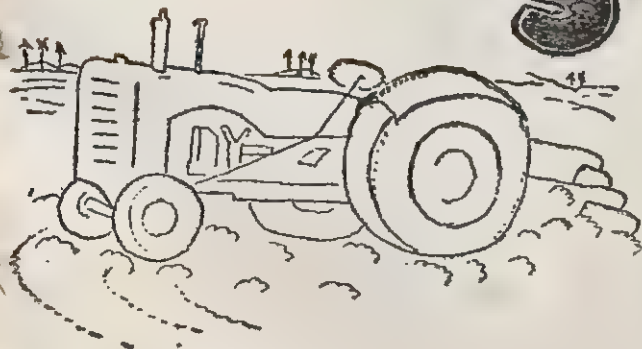
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Kalyani Karlekar

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Foreword

The upgrading and diversification of secondary education has created new problems on the one hand and has brought in a new outlook on the other. Some of the major difficulties are very real and concrete and we must work with the hope that the situation will be gradually improved. But there are many other improvements that can be brought about by our own initiative and imagination, by sincere individual and cooperative effort.

We teachers must, most of all, realise today that, it is not the big buildings and upgraded syllabuses that can raise the standard of education, but our ability to infuse life and soul into the same.

I should like to refer in this connection to the Total School Improvement programme that has been taken up by several schools of the city. They are trying to introduce various improved methods of teaching and evaluation of school subjects they are trying to enliven schooling by the introduction of activities in curricular and extra curricular work ; they are fully utilising their Hobby-clubs, N. C. C. and House System, Debates, Dramatics and other activities for the development of children ; they are trying to improve themselves by keeping up-to-date in new methods with the help of study groups and teachers' meetings. We offer our heartiest congratulations and good wishes to the headmistresses and teachers who are doing such pioneer work in school improvement and we hope that their fellow-workers in other schools would gather courage and enthusiasm from their success and launch similar projects and programmes on their own. We, on our part, are willing to help them in their efforts to the utmost of our ability and resources.

The Seminar Reading Programme that has been initiated since 1962-63 is another project that is likely to help those who really want to improve education. The details of the programme have been explained elsewhere in the pages of this journal. Here I would like to express our appreciation of the enhanced interest shown in the programme this year. While we had received only three papers in 1962-63 we had ten papers this year from teachers, head-mistresses as well as lecturers of training Colleges.

Some of the writers are young and enthusiastic new-comers, while others have the wealth of long experience behind them. Some of them represent the best schools in the city while others have voiced the problems faced by teachers in small-town and village schools. The range of subjects covered is also wide from parent-teacher cooperation to class room problems and methods of teaching.

The sittings were largely attended by teachers and trainees of several training colleges and discussions were marked by enthusiasm and interest.

Indeed we felt that proper understanding and appreciation of their problems has been helped by such discussions and the various ways and means suggested from a practical standpoint would go a large way towards the solution of the problems, if we set about the same with courage and determination.

We sincerely hope that the programme will grow in popularity from year to year.

NALINI DAS

Problems of Calcutta's Slums

(Some points from a talk delivered by Mrs. Paula Echevaria of the C. M. P. O. in connection with the Summer Vacation Courses, 1963)

I have been living here for two years in Calcutta and six years in India altogether and I do feel that I know about atleast some parts of Calcutta's land and people.

On the very first day of our arrival what struck us most was the dirt and squalor of the bustees, and the pavement dwellers, and naturally I find our work very absorbing and very important. When we came to Calcutta our job was to look at the problems of the whole city and get ourselves familiar with the complexities in order to facilitate the replanning and development of the city. In this, we were most concerned about the pavement dwellers, tens and thousands of people who live on the pavements. We learnt that they are mostly single persons and that this is a floating population, i. e. they donot live there permanently. They are mostly Rickshawallas and Thelagariwallas. After the floods of last year refugees also came from East Pakistan and Monghyr.

I made a particular study of the pavement dwellers. They are mostly single men. By single men I do not mean unmarried men, but men who have left their families in the villages. They are mostly single men living for generations in Calcutta going home to get married, coming back once a year for a few months leaving pregnant wives and unborn babies behind. They usually come here to seek jobs.

I have also made a particular study of bustee dwellers. The bustee population of Calcutta is however very different. They are largely family people in contrast to the single men.

The Census of 1951 showed us that 25% of the population of Calcutta is formed of single person families, while bustee dwellers constituted 50% or 54% of all the households of Calcutta. Households includes mother, father and children. In bustees we have largely nuclear families consisting of mother father and children. These are people who have been living in Calcutta for a long time. In many of the slums in Calcutta 50% of the people have been living in the same bustee for 20 years. The more we looked we realised that it as one of the most important aspects of social life. This is a problem which has no end and thefore it challenged us.

In this connection I can say that bustee and slum dwelling is a problem all over the world—from England in the 17th and 18th Century right through to America. In America we have the same kinds of problems. Migrating workers living in countryside come from village to cities for jobs and better education and amenities of life. Negros coming from South and Peurto-Ricans coming from the American dependent States. There are almost six hundred thousand Peurto-Ricans in New York City alone. The Negro population is now something like 15% of the population.

Now let me come back to the problem of the bustee dwellers. These bustee dwellers are uneducated and backward and their ignorance is exploited. When we wanted to solve

the problems of slums we learned that there were hundreds and hundreds of slums in Calcutta. Altogether there were three thousands of slums in Calcutta. We visited this slums intensively in order to probe into this problem. Some of them were registered bustees. We gathered this information from certain sources and as teachers should learn about them, you should read these books and pass them among the students. The name of one of these books is "A Socio-Economic Survey of Calcutta" written by Professor S. N. Sen. It states the problems of employment, occupation and economic structure of the city. It is a useful and compact book which has been published by the university of Calcutta. We read everything we could get. Another research work is a small monograph by Sri S. Chakravarty called "Housing Conditions in Calcutta."

The definition of a bustee, according to the Calcutta Corporation Act, is some ten cottahs of land with kutchha buildings (by kutchha building I mean not only mud huts but also pukka houses with corrugated tin roof, straw roof, tile roof and brick walls) with defective sanitation and unhealthy physical conditions. By this definition we find that some three thousand pockets bigger than ten cottahs have these unhealthy conditions.

In 1952 or 1953, shortly after the New Corporation Act was passed, three thousands of bustees were counted. Now to improve the condition of these bustees, we have asked for financial help from the Government. We have to work intensively and had to be very specific about the points. More than 80% of the population in this city live in single room dwellings or flats without any independent kitchen and toilet. This is quite an unsanitary way of living and is detrimental to health.

Some 50% of the population living in single room family dwellings are concentrated in two tiny areas i.e. in Ballygunge area and in S. N. Mukherjee Road. This is the background from which we are talking about Calcutta's slums. The city has 29 lakhs of population and of this more than 7 lakhs live in registered bustees. This means that a large portion of population live in the most unhygienic and unsanitary conditions, which involve not only their own safety but the safety of others. In this connection I can cite the examples of bustees in Maniktolla area. This general condition of unsanitary living affects the general health and stamina of the public. Diseases like Cholera and Small Pox spread easily. In most cases in most wards of the city the bustee population are predominantly Bengali. About 2/3 of the bustee population are Bengali and 1/3 Bihari, the rest consisting of others.

I would now like to tell you about the distribution of population and I, as a New Yorker appreciate it, because, we also have the same problem in our own country. So we town-planners and social workers are very much concerned about this social problem of this city. I must now speak of the allocation of houses and flats. We find that Bengalis are predominant throughout the whole city except in areas like Tiljala, Burrabazar and the area of Taltala away from Wellesley Street.

Hindi speaking people are predominant in Entally, Topsia and also in the continuation of Taltolla which is on Wellesley Street and lies behind Chowringhee and back to Wellington Square. On Chowringhee and Dharmotalla Street 30 p.c. to 40 p.c. are Muslims and Anglo-Indians and people from the U. P. are largely found around Shambazar and Paikpara areas.

Biharis are scattered throughout the city. Muslim and Hindu concentrations are also very easy to separate.

Before coming to Calcutta we lived in Delhi and there we were very much impressed by the problem of clearing the slum behind Jumma Masjid. We also have similar cases in New York city, where we are much concerned about the problem of integration. As there is no active policy of housing management in Calcutta, the single most crucial question is to find out what we can do to improve the conditions of the people living in bustees. About 16 p.c. of the population in bustees actually earn less than Rs. 50.00 per month and 55 p.c. less than Rs. 100.00 per month and they have to support their father, mother, wife and children. They take rice, chapatties, dal etc., with this income and moreover, they have to pay the rent. I think that people cannot live on less than Rs. 100 per month for if they do so they will not get the elemental balanced diet. It is not possible to feed a person with less than Rs. 20.00 per month.

About 18 p.c. of the population earns between Rs. 100 to 150. Lastly another 8 p.c. earns between Rs. 150 to 200. Now this problem is a gigantic one and unless given a generous subsidy by the Central Government, we can not finish the bustee rehousing scheme. It is a socio economic problem which has to be dealt with immediately. A flat can not be let out for less than Rs. 26 + Rs. 4 as extra charge i.e. altogether Rs. 30 is required for the rent. But even then with an income of Rs. 200, it is very difficult to pay rent, feed, clothe and give education to children, it is therefore necessary that there should be some part-time extra work for them so that they could earn extra income. Some of them work as hawkers and some as carpenters and cobbler etc. Now we must talk about the physical conditions of the bustees of the city of Calcutta. The condition inside these bustees are horrible. Most of them have service privies. In the very heart of the city we still have 20 families for a single toilet and sometimes 23 families have only a single latrine.

In Mr. Chakravarty's book there is an extremely moving description given by University students acting as field workers. Some twenty families had to share one toilet and one tap and that meant waiting for hours to get their buckets filled. They also had to carry the buckets full of water to their homes.

In this connection I will tell you of an interesting incident. One of my friends worked as an Anthropologist in Poona—he enquired of a Brahmin family as to how they could share the same tap with other castes, such as sweepers, cobblers etc., and whether this did not make them lose caste.

The Brahmin family informed him that they used to wake up at 4 O'Clock in the morning and take their water, whereas the sweepers rose at 7 o'clock in the morning. Thus there was no clash among these people. This is a detail of statistics which is a rather frightening and overwhelming. The bustees are so widely scattered over the city that they are almost on the fringes of our houses. We can not escape from them. In the Monsoons many of these bustees are impenetrable and the people have to wade in knee deep water. The bustees are flooded not with rain water but with filth from service privies, open drains etc. The economic impossibility and the magnitude of the problem is really terrifying and we have still to find out what the C. M. P. O. can do about it.

The C. I. T. has already undertaken of the new bustee rehousing schemes in Manik-tolla, Beliaghata and Dum Dum, but there are numerous other areas which have yet to be tackled.

PUJAH VACATION COURSES**4th - 14 November, 1963.**

A ten-day workshop training course was held from the 4th to the 14th November, 1963. The two subjects dealt with in the courses were Social Studies and the Maintenance of Cumulative Record Cards.

Mrs. N. Das, Principal, Institute of Education for Women, opened the session on the 4th November 1963 at 10 A.M. with an welcome address in which she explained the aims and activities of the Department of Extension Services and the training schemes undertaken by it.

This was followed by a talk by Mrs. K. Karlekar, Coordinator, giving specific instructions and helping the participants to divide themselves into the two different subject streams. Some Administrative matters were also dealt with at this meeting.

SOCIAL STUDIES

The participants in the Social Studies workshop divided themselves into three groups in the following manner—

Group I—Class X Schools under the guidance of Sm. Aparajita Roy.

Group—II—Class XI Schools under the guidance of Sm. I. Das.

Group III—Integrated study of history and geography for class VI—VIII under the guidance of Sri Sukumar Mitra.

In the afternoon session the participants divided themselves in the above groups and started detailed work with their respective syllabuses.

A 10-30 A. M. on the 5th November, Mrs. Karlekar gave talk on general orientation and, after that, the three groups worked from 11-30 A. M. to 4 P. M. with an hour's break for tiffin.

Sri N. L. Bask, Coordinator, Department of Extension Services of the David Hare Training College, lectured on general methods on the mornings of the 6th to 9th November from 9-30 to 11.30 A. M.

There was a film show on the 6th November when films on modern methods of teaching were shown.

All the participants were taken to an educational field trip to the Calcutta Port for the whole day on the 13th. Officers of the Port Commissioners took them round to various parts of the of the Docks, Jetties, Warehouses and Railways where they saw loading and unloading as well as some repair work. They also visited Taratala Colony—the largest housing scheme in Asla for class III and IV employees. Where they saw the residential quarters, the Welfare Office, Dispensary and the Education Centre conducted by the Port Commissioners' Officers Wives' Association.

Work of Group I :—

This group worked under Sm. Aparajita Roy who, in her preliminary survey, explained the nature and scope of social studies and stated some of the peculiar problems which might arise in the teaching and evaluating this subject for the School Final Examination for class X schools. The subject having been introduced for the first time in 1963, as an

"examination subject", in lieu of history and geography, the problems of dealing with the public examination were yet to be discovered in the practical field.

It was now generally accepted that, social studies, a subject with a practical bias, required a different approach in methods of teaching as well as assessment of learning. Application of old, stereotyped systems of teaching and examination would not only involve a continuation of the old memoriter system but also lead to the loss of most of the objectives of its teaching.

After this, the difficulties and problems in the teaching of this subject under the given circumstances were listed as follows :—

- (i) This subject being an examination subject, teachers were very eager to "finish" the syllabus and as the syllabus is given in a detailed, authoritarian manner, there is very little scope for experimentation with projects and dynamic methods of teaching in this subject.
- (ii) Teachers have difficulty in adjusting between the specific subject disciplines needed for examination and the integrated approach required for the achievement of the objectives of teaching the subject.
- (iii) Methods of teaching are also affected by the system of examinations and, as this subject has been introduced this year, teachers will be kept guessing as to the types of questions that would be set and whether the specific points or an integrated approach would be used in the examinations.
- (iv) As not more than five periods are allotted to the teaching of the subject, this time is inadequate for making the practical approach to the subject effective unless additional periods were given for practical work.
- (v) It would be difficult to find a procedure for the 'internal' marks given by schools for practical work.

Then this group was divided into three units for making a critical survey of the syllabus and working out intergrated patterns of teaching.

Calculating the total number of periods to be three hundred (170 in class IX and 130 in class X) the time was allocated in the following manner—

A. The first paper—Three broad topics to be distributed over 118 periods in classes IX and X.

		38 X 2 periods of lecture.	
(i)	Our needs)		
(ii)	Food crops)	20—	„ of projects
(iii)	Industries)	18—	„ „ class tests
		4—	„ „ educational trips

B. First half of the second paper :—Three broad topics to be distributed over 97 periods in classes IX and X.

(i)	Historical background and religion	55 periods for lectures.
(ii)	Languages	20 „ for projects.
(iii)	Art and culture	17 class tests.
		5 educational visits.

C. Second half of the second paper :—Four broad topics to be distributed over 85 periods in classes IX and X.

- | | | |
|-------|---|--|
| (i) | Free India | 50 periods for lectures. |
| (ii) | History of the achievement of independence. | 11 „ „ projects. |
| (iii) | The constitution of India—India's ideology, economic policy, foreign policy | 18 „ „ class tests.
6 „ „ educational visits. |
| (iv) | India's attitude towards international peace. | |

Details of allotment of periods worked out in the above scheme have been appended at the end of the report. The following practical work was also done in four units—

A—Scrap-books on food, agriculture and River Valley Projects,

B—Charts depicting different aspects of Moghul and Rajput art and pictures of Ajanta and Ellora.

C. —(i) Development of hydro-electricity, Irrigation and industry in the first two Five year plans.

(ii) Expansion of education in West Bengal in three Five year Plans.

The methods and problems of evaluation were also studied in the groups and a number of questions of different types were framed. It was suggested by common consensus that 25 p.c. of the marks should be allotted to practical work. The following break up was suggested for evaluation :—

Paper I—Essay type, short answer type, matching tests, classification tests etc—75 p.c.
Practical work—25 p.c.

Paper II—Essay type, master matching items, multiple choice, classification, judgement—25

A break up of syllabus into work-periods in order to integrate the teaching, learning material in convenient units to help the students to acquire information and also to develop good citizenship qualities :—

Paer I :—

- | | | |
|----|--|---|
| 1. | Our country, boundaries, climate, physical features etc, | 3 |
| 2. | Our needs :— | |
| | a) Food, clothing, shelter and others | 3 |
| | b) Food in different regions of the country ; reference to rainfall, climate, physical features in that connection | 4 |
| | c) Agriculture—with reference to the above geographical factors—4 | |
| 3. | Causes of differences in agricultural products, etc, methods of cultivation, irrigation etc. | 8 |
| 4. | Food crops and other crops | 6 |
| 5. | Methods of agriculture in other countries | 4 |
| 6. | Our food problem— | |
| | a) Improvement of production | 3 |
| | b) Alternative foodstuffs | |

7. Food production through husbandry, fishery, poultry and—3
other means.
8. Occupations in different areas for the earning of livelihood—3
9. Communication, transportation and occupations in 6
connection with them.
10. Forest, mineral and industrial products 3 3+4
11. Our systems of education and preparation for future 4
occupations,
12. River barrages and education schemes 4
13. Industries—heavy, cottage, silk, wool, cotton etc. 8

Lectures Total ;— 76

14. Field trips 4
15. Projects 10
16. Class tests 18

Total period—118

Paper II (First half)

1.—Historical background and religion.

Subject area.	Religion	Chronology	Periods
a) Indus Valley civili— sation and Aryan Civilisation	Integration of existing religions and Hinduism.	4000—B.C	3
b) Magadha, Alexander, Asoka.	Budhism and Jainism.	5000—1 B.C	4
c) Kushana	Buddhim	1 B.C—200 AD	1
d) Gupta Period	Hinduism	300—500 A.D.	1
e) Harshabardhan	Buddhism	600—625 A.D.	1
f) Establishment of small independent kingdoms of North and South India.	Parallel existence of Hinduism and Buddhism.	700—1200 A.D.	4
g) Sultanates of India	Islam	1200—1526 A.D.	4
h) Moghul Empire in India	”	1526—1857 A. D.	5
i) Importance of South India	Introduction		8
i) Sultans—Bahmani Kingdom and Vijaynagar.	of Christiainity and the reformers rise of religious		
ii) Moghul period Marathas, Bijapur, Golkunda			
j) Beginnings of the British Empire in India,	”		5

2. Languages :—

3. The Arts :—

- a) Architecture, sculpture, graphic arts—
b) Music and dancing

10
6

Lectures 55

4. (a) Preparation of charts, historical survey of religion,
languages, architecture, culture etc. (Projects)
(b) Field trip to one of the following :— Indian Museum
Victoria Memorial Bandel Church, Sahitya Parishada
or any other place of historical or cultural importance.

20

5

5 Class tests

17

Grand total 97

Paper II (Second Half)**Class IX**

1. History of the struggle for independence.

- a) Introduction : Popular revolt.
b) Development of nationalism and establishment
of the Indian National Congress.
c) The Swadeshi Movement and its reactions
d) Mahatma Gandhi and Non-Cooperation
e) Netaji and Azad Hind Fauz
f) Independence and division of India

1
2

1
2
1
2

2. Independent India :

- a) Introduction—the State and the Constitution of India
b) Unity in diversity :— the responsibility of building the nation
c) Some important principles—Fundamental rights in the Indian
Constitution
d) The ideals and guiding principles of the Federation of
India : economic principles and other principles development
e) The structure of Indian Federation
f) Indian administrative system :— Legal Department and Legislatures,
procedures.
Administration : Executive and Judiciary—Independence
of departments.
Urban and rural self government
g) The democratic state and franchise
h) Ideals of welfare state with a socialistic pattern of society
i) Building up new India—Problems of population and
family planning

1
1
1

3
2

2

1
2

Classes 28

3. Projects—	
a) On the history of the struggle for independence	3
b) On any aspect of Indian administration	3
	<hr/>
	6
4. Class Tests	10
5. Field trips	6
	<hr/>
	22
(28+22 = 50 periods in class IX)	

Class X

1. Five Year Plans of India		5
2. Development—		
Improvement of public health—		2
Prevention of adulteration of food		1
Education		2
Village Panchayats Block Development—total and extension programmes		2
3. India's foreign trade—		
Principles of foreign trade, exports and imports	2+3=5	
4. India's foreign relations—		2
National and international ideals and the principles of peace and non-alignment.		
5. The place of India in the U. N. O ; World-understanding, the Family of Man		2
		<hr/>
	Lessons	22
6. Projects—Any one unit to be taken		5
7. Class tests		8
		<hr/>
	Total periods	35
Total periods in IX and X—50 + 35 = 85.		

Some sample questions :—**A Essay type :—**

1. Describe the different monsoon winds which blow over India. When and in which areas do they cause rainfall ?
2. What are the uses of forests to a country ? Enumerate the different uses of forest grass or bamboo.
3. State why the Himalayas are not so rich in minerals while most of the mineral resources of India lie in the Deccan region.
4. What are the different kinds of oil produced by refining mineral oil ?
5. Give an account, with illustrations of the different types of irrigation methods used in India mentioning the regions where they are used.

6. Write an account of the efforts of the Government of India in trying to make India self-sufficient in food.
7. To what extent is it true to say that geographical factors influence our food habits?
8. Give reasons why the people of West Bengal, Madras and Orissa take rice as their basic food while those of Punjab, U. P. and Delhi take wheat.
9. Why is fish the main protein food of West Bengal?
10. What are the reasons for saying "water is not a food, but the body needs it"? What is the quantity of water that should be taken everyday?
11. Do we generally exercise aesthetic consideration in our dress habits? To what extent is our dress influenced by social and cultural factors?
12. Describe the typical dresses of West Bengal.
13. What are the chief problems of housing in West Bengal? Give some suggestions for their solutions.
14. Describe the various types of possible occupations in agriculture and industry.
15. Write an essay on cottage industries or chemical industries.
16. Describe the growth of textile industries in India with reference to the main centres of production. What is the position of India in the import and export of textile goods?
17. Describe the cultural, informative and educational role of journals and newspapers.
18. Describe India's relationship with the world through the ages.
19. Describe India's international policy today.
20. Write a short essay on the necessity of world-peace in the modern age.

B Short Answer Type :—

1. To be answered in one paragraph only—
 - a) What is the meaning of "rotation of crops"?
 - b) What are the geographical conditions under which jute grows in India?
 - c) What is the relationship between the food crops of a country and the food habits of its people?
 - d) To what extent is India self-sufficient regarding food?
 - e) What are "poultry" and "husbandry"?
 - f) How can we increase the protein-content of our food?
 - g) What are the modern, scientific methods of food-preservation?
 - h) What are the important features of the preamble of our constitution?
 - i) What is the Indian National Congress?
2. To be answered in thirty words only—
 - a) Why does the basic food of Bengalis consist of rice and fish?
 - b) Why do the people of East India drink tea while those of South India drink coffee?
 - c) Describe how river valley projects for irrigation can help to change the food habits of a people.

- d) Compare the food habits of the Japanese with those of Bengalis.
3. To be answered in one sentence only—
- What is self-sufficient agriculture ?
 - Why does coconut grow mostly along seacoasts ?
 - Why are tea and coffee products of hilly regions ?
 - What is "balanced diet" ?
 - Why do the people of tropical countries take less meat and fats than those of cold countries ?
 - What types of foodstuffs contain the greatest proportions of vitamins ?
 - Why should sufficient quantities of water be taken everyday ?
 - What is "food value" ?

C Objective Type :—

- Fill up the gaps :
 - Fish is the main protein food of—
 - The normal need for food for an ordinary adult is—calories per day.
 - India is the largest producer of—in the world.
 - West Bengal is the third largest producer of—in the world.
- Multiple choice :
 - In case of a sudden foreign aggression over India which of the following authorities can declare war against the aggressor ?
(Put ✓ in the brackets against the right answer)

The President	()
The Prime Minister	()
The Cabinet	()
The Defence Minister	()
 - Three statements about the fundamental principles of democracy have been given below : put the following marks in the brackets against them :
If the statement is fundamental to the concept of democracy (✓), if it is contrary to the concept of democracy (x) and if it has no connection with the concept of democracy (O)
In a democracy the Government is responsible to the people.
The fundamental principle of democracy is non-alignment.
Democracy is the Government of a benevolent dictator.
 - A public water tap on the street has gone out of order and is causing a very heavy wastage, which of the following steps would a responsible citizen take under the circumstances ? (Put ✓ in the brackets against the right answer.)
Complain to the municipal authorities about the carelessness of their employees
Telephone or personally inform the authorities immediately.
Criticise the people of the locality for their negligence.

3. Each of the phrases in the left hand column below is connected with one phrase in the right hand column. Write the number of the left hand column within the brackets next to the phrase in the right hand column with which it is connected—

a) Plantation agriculture	Educational Service
b) Dry agriculture	Aeroplane.
c) Sources of hydro-electric power	Heavy industry
d) Communication	Water is not available at the time of agriculture
e) Teacher	Roof of palm leaves
f) Silk industry	Rivers coming down from mountains with strong current
g) Motor-car industry	Mud houses
h) Southern States	Textile Industry
i) Eastern States	Walls with bamboo matting
j) Northern States	

Work of Group No II

This worked under the guidance of Mrs. I. Das on the Social studies syllabus for Class XI Schools. The main objects in view were (a) correlation of the three sections of the syllabus, and (b) an intergrated study of history, geography and civics as social studies.

As subject areas of history, geography and civics are prescribed in the syllabus in three sections, the main problem of the group was of the correlation of these three sections. Social Studies as a subject would lose its meaning if such integration was not achieved. The report of the Mudaliar Commssion is very emphatic on this matter.

With this end in view, a sample study was made on the topic of "Villages and Towns in our Country" from Section I, topic No 5 of the prescribed syllabus. One section of the group worked on on villages and another on towns. These groups also selected other topics from the syllabus and correlated them with the main topic.

Teaching points were prepared on the following units :—

- 1) Types of Houses in Indian Villages.
- 2) Economic Conditions of Villages, Village Fairs.
- 3) The Health of a Rural Community.
- 4) Village administration.
- 5) Growth of Towns from Villages, Types of Towns.
- 6) History of Town Development in India—Indus Valley Civilisation.
- 7) How Calcutta Grew from Villages.
- 8) Organisation of Local Administration - Calcutta Corporation and Citizenship.

The following educational apparatus were also prepared by the members of the group—

1. Map of Calcutta—the Metropolitan City.

2. Charts illustrating scenes from villages and towns.
3. Models of a farming village and a modern town.

The contents of teaching units prepared by the groups are being given below :—

Topic—Our Towns and Villages

Unit I—Types of Houses, Indian Rural Housing.—(By Bela Mitra)

The use of shelters for protection from attacks of wild animals and natural calamities and forces had led to the development of houses and villages.

The structures and materials of houses are influenced by regional geographical environs and cultural and industrial development of communities. In certain forest areas of India people build houses on trees in order to protect themselves from attacks of wild animals. Such tree houses are found in the jungles of Uttar Pradesh. Houses are also built with leaves and branches of trees as in the Andamans. These houses are generally oval or semi-circular and look like beehives.

Bamboos, timber, large round leaves of gol-pata and different kinds of reeds (nal-khagra) are the main regional house-building materials in West Bengal. Houses are also built with bricks and tiles. Thatch being combustible is being replaced by tiles.

Variations of structures often occur because of climatic differences eg. thick walls in hot and thin walls in moist climates. Shapes of roofs also differ according to dry or wet natures of climates.

Structures of houses also differ according to the financial conditions of the owners and several departments of the Government are now devising cheap housing schemes for low-income groups.

Villages are constituted by clusters of houses. There are about 650,000 villages in India, but the density in the occurrence of villages differ from region to region. For example, villages are widely scattered in the Sunderbans and closely set in the 24 Perganas. Some large villages have large middle-class populations in addition to farmers and agricultural workers. Many of the larger villages have amenities comparable to towns in lighting, sanitation, hospitals, schools etc. while most of the smaller ones have very poor living conditions.

Villages in rice producing areas in sub-Himalayan regions are often situated on hillocks and are generally widely scattered. Such villages are found in West Bengal and the Kumayuns and Almorah districts of Uttar Pradesh. On the other hand villages near tea-gardens or orange-orchards are rather thickly populated and more prosperous with various amenities. Planned villages have been developed in certain areas as a result of the partition of India and the influx of refugees.

Villages in the plains and in mountain areas belong to distinct types. The houses are different in structure and material and villages in mountain areas are widely scattered. Radical changes have occurred in the economics of villages from ancient to modern times.

Villages in ancient and medieval times were self-sufficient, but it is now impossible to visualise a self-sufficient village. One of the main causes have been the development of towns necessitating imports of foodstuffs from villages : the next step being imports of manufactured goods from towns by villages.

Unit II. Economic Conditions of Villages : Village Fairs—(By Kalpana Roy)

The rural economy of medieval India was destroyed by the British rule and building India would now involve construction from the beginning. The system of apprenticeship was current in the pre-Muslim period and people employed in utilities and service were given annual payments in cash or paddy levied from villagers. The barber, washerman, kaviraj, all gave their services all the year round for payments in different quantities of paddy according to the value of services performed. This system is still partially current in the Garbeta area of Midnapore district.

Commodities which were not of such constant use (like bell-metal utensils) were paddled round from village to village or sold at fairs which were periodical markets combined with enjoyment of festive occasions. Fortunately, the village fair is still alive today. In the Kalisundi Fair at Barisal, thousands of boats use to be sold, large quantities of mountain products are sold every year in fairs in Almorah. Sonepur fair is still the largest animal market in the world and about five lakhs of people come to trade in the annual Kartika fair in Badaun in the U. P.

Rural economy of the old times integrated technicians, craftsmen, cultivators etc., into the life of the village. Production was according to the needs of the community and payments were made by cash or barter. Village fairs involved a wider field of exchange achieving international areas at times.

As modern economic developments have rendered village self-sufficiency impossible, it has also led to the institution of world fairs.

Unit III. The Health of a Rural Community—(By Indrani Dasgupta)

Health is one of the prime needs of citizenship and the root of public health lies in the consciousness of every man of his responsibility for it.

The requirements for health can be listed as following :—nourishing food, pure air and water, disposal of garbage and waste, prevention of epidemics, maintenance of dispensaries, hospitals, graveyards and burning ghats, also good housing and roads. Taking both physical and mental health into account, these include also amenities for healthy amusements and cultivation of good taste as well as the establishment of law and order.

Compared to modern progressive countries India is very backward in the organisation of public health. The average expectation of life is only 32 years (Holland 72, U.S.A. 60, U.K. 56). The rates of both birth and death being very high constitutes a problem of health.

The first step towards the formulation of a policy of public health was taken in 1859 when, after the taking over the government of this country by Queen Victoria in Parliament, a Sanitary commission was established in each of the three Presidency towns of Calcutta, Madras and Bombay. Provincial Public Health acts were passed in 1912 and Sanitary Boards were constituted with official and non-official members.

At the present there is a Civil Surgeon and a Government hospital in each district and Health Department officials in every thana, since the inauguration of the Panchayats they are also undertaking certain responsibilities for public health. The Minister of health and Local Self Government is the head of the State Department of Health.

One of the very important principles of public health that has not yet been introduced into our country is that of prevention instead of control which includes compulsory inoculation and vaccination in addition to other measures. The problem of nutrition, also, is a matter of this category.

The problems of health propaganda are aggravated by the fact that only 29% of the people of West Bengal are literate which makes a large proportion of publicity activities through films, radio, mobile libraries, journals, newspapers etc. ineffective.
(Ref. Elements of Civics—R.P. Patwardhan pp 89.90.)

Unit IV : Village Administration—(By Kalpana Ray)

In medieval India villages were administered by groups of elders constituting Panchayats. This system had decayed in the British rule but the gap had never been filled by the bodies of local Self Government instituted by the British.

The Montague-Chelmsford report of 1920 had mentioned the desirability of reestablishing village panchayats. Mahatma Gandhi had also recommended their organisation and the constitution of India today accepts panchayats as one of the major institutions of rural self government.

Panchayat Act have been passed all over India from 1958 (Bombay) onwards and all villages are expected to have panchayats by the end of the Third Plan. Panchayats or Gram Shabhas will consist of 7 to 15 members with two seats reserved for women. Each panchayat will have one Sarpanch and one Upa Sarpanch in presidential and vice-presidential capacity respectively. All the members will be elected by adult franchise and panchayats will hold atleast two sittings each year,

The activities of panchayats would consist of health, education, culture, agriculture, conservation of forests, village arts and crafts etc. Grants to the extent of 25/30 p.c. of land revenue would be apportioned by the Government for these activities.

A Nyaya Panchayat oversees five village panchayats with one member from each. These have judicial but no executive powers.

A sketch of the older system of village self government is given below.

A Union Board is constituted with several villages and is responsible for the maintenance of village roads and primary education and can try minor civil and criminal cases.

A District Board covers an administrative district and is responsible for welfare, building and maintenance of roads and bridges, sinking of tubewells and digging of reservoirs for supply of drinking water, establishment of charitable dispensaries and hospitals, prevention of epidemics, control of infectious diseases etc.

The scheme of Bloc Development was also instituted from 1952 to (1) make villages self-reliant and (2) initiate total rural progress. In this scheme each project area is divided into three development blocks with a hundred villages in each. Each block is again divided into several mandals. A Gram Sevak is posted in each mandal and each block has a Bloc Development Officer,

Much of this new rural development work must be educative in nature. Our villages having been in static conditions for several centuries has deprived the villagers of all

initiative. The only way new ideas of progress can be inculcated is education and propaganda to make them feel the need for cooperating with each other to improve their own conditions.

V Development of Towns from Villages :—Types of Towns

(By Gayatri Bhattacharya)

Villages were the earliest units in organised community living and then they grew larger through the expansion of their efforts at obtaining the primary requisites of life as clothing housing, education into wider fields. In this way development of towns from villages had a direct relationship with efforts for good living and also contributed to the progress of civilisation itself.

There have been cities like Mohen-Jo-Daro, Taksasila, Varnasi, Pataliputra etc. The development of Calcutta from the villages of Sutanuti. Gobindapur and Kalikata is an example of the growth of a modern city. The etymological significance of the word "Nagar" has been variously analysed as

- (1) Where mountains i. e. houses large as mountains exist.
- (2) A place which has been built on a mountain, eg, Rajgir.
- (3) A State of settlement, i. e. that which does not move—as opposed to a nomadic existence. This has a special significance re : the myth that the mountains which used to fly about became 'naga' or immovable after Indra cut their wings off.

The Persian equivalent of the word is "Shahar" and at the root of the English word "town" lies the Anglo-Saxon word tun, meaning a boundary wall,

The German word Taun also has the same meaning. This points to the fact that in older times towns used to have surrounding walls which is also borne out by actual observation.

A nagar or a town, however, has a larger connotation. The amenities of town life are many—of transportation, roads, education etc.

Towns can be divided into four types according to natural and geographical factors—

- (1) Towns in mountainous countries
- (2) " " the plains,
- (3) " on the river banks which generally grow large because of convenience of riverine transportation.
- (4) Towns with seabords which generally develop into ports.

Towns can also be classified according to origin—

- (1) Industrial or commercial towns which grow round industrial or marketing centres, c. g. Tatanagar, Durgapur, Chittaranjan etc.
- (2) Administrative centres or capitals—Delhi, Murshidabad.
- (3) Towns in holy places,—Baranasi, Puri, Nabadwip.
- (4) Health resorts—Simla, Nainital, Darjeeling.
- (5) Towns arising out of access of population due to causes other than above.

- (6) Towns on rivers or or sea with effective hinterland—Calcutta, Bombay, Madras. Sometimes historical or political causes lead to the development of towns :—Tribeni Ranaghat, Serampore, Rishra, Chandannagore, New Barrackpore etc.

Hill and Cantonment towns in India are generally marked by Western influence carried over from the days of the British rule—Deolali, Ambala, Poona, Simla, Darjeeling etc.

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Unit VI History of Town Development in India—Indus Valley Civilisation

(By Bani Biswas)

The Indus Valley civilisation had developed three thousand years before the birth of Jesus Christ, some time between 3250 and 2750 A. D. Archaeologists, with the help of Anthropologists and Geologists have shed some light on this unknown period of Indian history.

This civilisation, as represented by Harappa and Mohen-Jo-Daro, extended from the banks of the Ravi in Punjab (Harapp) to the Indus in Sind (Mahen-Jo-Daro) at a distance of about 400 miles, but traces of this type of civilisation have been found in other areas also.

These two cities were very similar in structure and architecture. Both had a fort on a mound in the West. The mound might have been meant for the prevention of floods and the fort for holding enemy attacks. The cities had houses built with burnt bricks with various highways and byways. The large numbers of roads pointed, possibly, to large populations, ease of travelling and the stability of the states.

Each city was divided into different localities and each locality had residential, houses, shops etc. There were double storied houses with staircases. Small barrack-like housing systems localised in certain areas of the towns might have been slums or labourers quarters.

The largest buildings in Harappa measured 169' X135' which has been considered to have been a granary while the largest building in Mahen-Jo-Daro—180' could have been a public bathhouse with swimming pools, varandas, galleries etc. Both the towns had public halls for meetings and conferences.

The streets had lamp-posts, dust-bins and paved covered drains, connected with housedrains, on both sides. There were manholes and the sewerage was cleared outside the precincts of the town.

These towns used to have surrounding walls, which is also borne out by actual observation.

The main agricultural products were wheat, jawar and dates also rice, peas sesame and cotton. Cows, sheep, asses and pigs were the main animals, while chicken was the chief

poultry. It is believed that the people used to eat beef, mutton, bacon and ham, turtle and the meat of alligators. They used to fish in rivers and the sea and ate fresh and dried fish.

They used cotton and woollen textiles. Men and women used to wear stitched upper and lower garments. They used jewellery for the arms, neck and fingers. Women used vermillion and lipstick and carried "vanity bags."

Children played ball and grown up people chess. Hunting, fishing, bird-keeping and bull-fighting seemed to have been popular pastimes. Toys found on the ruins consisted of dolls and various kinds of animals.

The architecture was utilitarian without fine decorations, but that these people did not lack craftsmanship was evidenced by large, numbers of seals, earthen and metal figurines, toys, gold and silver jewellery, earthen and metal vessels, drawinga, ivory combs, chessmen etc.

The main means of transportation were bullok carts with or without covers on the roads and boats on the rivers.

Nonmechanical implements were used as copper and bronze needles, knives, sickles, wedges, hooks, axes, saws etc. Two 18" long copper swords have been unearthed in Mohen-Jo-Daro.

Harappa and Mohen-Jo-Daro were commercial towns full of shops along the roads. Weights and measures were used and cotton textiles and agricultural products were exported. Trade relations with Sumer, Egypt, Babylon Mesopotamia had been established.

The script used by these people, partly cuneiform, partly pictorial has not yet been fully deciphered.

Dead bodies were either burned or interred and objects of daily use were placed inside the graves.

The Mother cult was followed as also the phallic worship of Shiva. Worship of animals and natural forces like, fire, rivers, trees, snakes etc have been traced by some scholars.

Archaeological excavations have shown several layers in each town pointing to the fact that these cities might have been destroyed and rebuilt several times,

Unit VII—The City of Calcutta (By Bani Dey)

The English merchant Job Charnock had come to the village of Sutanuti on the Hooghly and found it convenient for the purposes of commerce. There was a market nearby where the "Setts" and "Bysacks" carried on roaring trade. Land was cleared and Charnock's "house" was established in Sutanuti in 1690. The village of Sutanuti comprised Baghbazar, Kumartuli and Burrabazar. Village Kalikata was to its South, extending from Burrabazar to Esplanade and to the South of it upto Hastings along the river was Gobindapur. Charnock obtained permission from the Moghul rulers to purchase these three villages and the purchase was made on the 10th May, 1698, from the Sabarnya Chowdhury landlords of Behala for only thirteen hundred rupees.

The first office of the East India Company was established in a room in what is now Dalhousie Square. This was followed by many new offices and people started to crowd round this area.

A fort, named Fort William after King William III who was then on the throne of England, was built and the presence of British troops in the fort led to a decrease in thefts and robberies in the area. The river Hooghly which offered a convenient route of transportation was also a good natural boundary for defence and a canal (known as the Maratha Ditch) was dug from it along the north of the area near Belghoria, to withhold attacks by Maharthas.

A shopping centre was developed with new market places and residential areas for people following different trades and occupations giving rise to significant names as Kumartuli, Muchipara, Jeliapara, Kansaripara, Tantipara etc for residential areas and Shyambazar, Bagbazar, Sobhabazar, Bowbazar, Notunbazar etc for markets.

Amenities of drinking water, hospitals, schools, roads, transportation etc developed gradually with the increase in population. The Laldighi in Dalhousie Square which was full of muck and undergrowth was cleaned and resuscitated at the cost of Rs. 20/ only and a fruit and flower garden was laid around it. Churches were built. The European residential area extended from Hastings Street to China Bazar and Burrabazar lay to its North. The Bengali locality was in Sutanuti North of Burrabazar.

Changes occurred gradually, a railway was laid, a port was founded, factories grew up along the banks of the Hooghly, large houses were built and city amenities developed.

Modern Calcutta has, thus, come into being in a little more than two hundred years in a swampy forest area infested by tigers, snakes, thieves and robbers.

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Unit VIII—Local Administration in Towns and Cities—(By Nomita Sarkar)

Towns and cities as well as rural areas, in democratic countries, have self government of local affairs by the people of the locality. Under the central policies of the State, local needs are met by these bodies by measures suitable for each locality. Local Self Government is very important as an institution for the political education of the people in leadership, citizenship and statesmanship and for the inculcation of the spirit of cooperation and self help,

Rural and Urban areas need and have different types of local self-government. The urban type is by Municipalities or Municipal Boards. In small "notified" or "town" areas special boards are constituted on the lines of municipalities while large cities like Calcutta Bombay and Madras have Corporations enjoying the greatest possible autonomy.

The work of Calcutta Corporation is carried on according to the Bengal Municipal Act, 1923 which superseded Act III of 1899.

The city of Calcutta has been divided into 80 wards after the revision of 1956. Each ward is represented on the Corporation, by an elected Councillor and there are also members nominated by the Government. Elections are held in every three years. The

Concillors elect their Chairman, the Mayor, and a Deputy Mayor. These offices are held for one year only. The various departments of the Corporation—Education, Finance, Revenue, Public Health, Town Planning and Development etc. have "Standing Committees." A Comissioner appointed by the State Government on the recommendation of the Public Service Commission, is the highest executive officer of the corporation. He can be removed by the recommendation of the Corporbtion.

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Report of Group III

This group consiting of eight participants worked under the direction of Prof. Mitra with the aim of preparing a scheme for teaching history and geography in classes VI—VIII with "a social studies approach" and the terms of reference were as following—

- (1) Recasting the syllabus within given limits.
- (2) Correlating history and geography.
- (3) Devising suittable methods of teaching with a social studies bias.
- (4) Devising adequate tools of evaluation.

Prof. Mitra gave a short introductory talk to clarify certain basic principles. The crucial point of modern education, according to him, was the integration of man as a total personality through an integrated system of education. Different subjects in the curriculum taught as seprate, unconnected entities had no contribution to make in this process. All teaching should be complementary and supplementary to each other to enable the students to view life as a maningful and purposeful whole.

Social studies had the important function of focussing this viewpoint. It brought out the fact that man was a dynamic part of the social environment acting and reacting to it and made the students conscious of the vital relationship of subject matters with one another and with life.

Prof Mitra referred to an experiment which he had conducted by teaching an integrated course to twentyfive students in a class. He had recast the syllabus to bring literature, science, history and geography under social studies while mathematics and craft were dealt with as seprate subjects. The other sections of the same class served as a control group being taught in the orthodox way. He had found that the pupils under experiment progressed much more quickly than the others. Their curiosity was awakened because they were made to think critically on different problems; learning for them because of problem-solving and instead of being afraid of examinations they awaited them as something on which to test their mettle.

As school teachers could not change the syllabuses or the material conditons, about them, their duty was to make the best of what they had in order to enable the pupils to develop and, to do this, they had to make the pupils think for themselves through solving problems. Another task would be to develop social attitudes and undersandings and, lastly, their attainments, skills etc were to be tested through various type of evaluation tools. Free discussions were to be encouraged in order to teach pupils to think

independently. For example, in giving a lesson on the D. V. C., such questions could be raised as—"How can man use nature for his own purpose? "Why the corporation was not as successful as it was expected to be? etc,

Instead of forcing contents upon the students, the teacher should make them conscious of the problems of the community. Prof. Mitra referred to the bridging of a wide ditch, by the students of a suburban school which did not cost much but provided a short cut for them to their playground and was also of immense service to the people of the neighbourhood.

Lastly he warned the participants how examples of antisocial acts on the part of teachers would leave their mark on the minds of the students, for example, social studies not being included in the scheme of the external public examinations, some schools provided no classes and held no examinations on the subject but forwarded fictitious records to the Board of Secondary Education. Students with such examples before them would never learn to hate dishonesty or develop a social conscience.

Another aspect of the teaching of an integrated syllabus was that it needed the co-operation of the teachers of the subjects concerned, the permission of the head of the institution and the support of the parents of the students. It was however the function of the teacher of social studies not only to put the subject in its proper place but also to prove the cause of co-operative, dynamic, experimental teaching.

The main group was then divided into three sections to discuss the correlation of history and geography in classes VI, VII and VIII respectively. The following guiding principles were adopted in this connection—

- a) History and geography should be taught by the same teacher in each of the classes.
- b) Teachers of the three classes using the correlated approach should sit together from time to time to discuss their lesson plans.
- c) The syllabuses for geography should be slightly rearranged for facilitating correlation with history.
- d) The teaching programme should include discussions, critical thinking cooperative activities, some practical work and field trips.
- e) An effective method of evaluation should be devised.

(Reported by Padma Ghose)

Work of Section A

The following topics of studies were suggested by the section as a syllabus for class VI.

1. Discussion of aboriginal ways of life as a background to studies in modern civilisation.
2. Short descriptive studies of Asia and the cradles of the oldest civilisations of Asia on the map of the world.
3. Studies in the civilisations of India.

4. Religions in India.
 - a) Chronological and geographical location.
 - b) The lives and works of the great religious leaders.
 - c) Studies of the places of origin and the spread of the religions.

5. India and the world—

- a) India's neighbours.
- b) Indias' international relations down the ages.

A sample plan of a unit of study was prepared with the following objectives ;—

Subject ;—Buddhism and Jainism—the two religions born in the Ganga Valley.

Objectives (1) To study the lives of Buddha and Mahavira and describe their religions and the places connected with them.

(2) To collect information and pictures etc on the above subject and acquire skills in preparing graphs, drawing maps, writing reports etc.

(3) To develop powers of integration and problem-solving and the abilities to work cooperatively and independently.

Some sample questions on the study of the unit were prepared as given below—

- 1) What are the religions followed by students of your class ?
- 2) What are the names of the founders of these religions ?
- 3) Why should no difference be made between people because of difference in religion ?

(4) Fill up the gaps in the sentences given below by one word each :—

- (a) The founder of Buddhism was...
- (b) The meaning of the name Buddha is...
- (c) Nepal is situated to the...of India.
- (d) Buddha preached about the ...path
- (e) Ceylon is situated to the...of India.
- (f) The ... religion had spread to China.

(5) Each question given below has several answers, draw a circle round the correct answer in each—

- (a) Buddha was born in... - Ujjain, Kapilabastu, Kusinagar.
- (b) The Buddhist scriptures are—the Tripitakas, the Vedas, the Bible.
- (c) Buddha's father's name was—Asoka, Suddhodana, Bimbisara.

(6) (a) Mention one tenet of Buddhism which has attracted you the most and give the reason in one sentence.

(b) Name the incidents which inspired Buddha to leave worldly life.

(7) What were the places outside India where Buddhism had spread ?

(8) (a) Name the country of the world about which it is said that the Sun rises there first,

(b) What is the main religion followed there ?

(c) Where is that country situated ?

(9) (a) What are the main differences between Buddhism and Jainism ?

(b) What are the fundamental principles of Jainism ?

(c) Why is the religion preached by Mahavira called Jainism ?

Work of Section B.

The following recast of the syllabus was suggested, by this section, for class VII

- (1) Location of the Roman Empire on the map, the rise and fall of the Empire, description of the barbaric class—Germans, Huns etc and a geographical description of Europe,
- (2) The Byzantine Empire and its civilisation.
- (3) The rise and spread of Islam : Ancient Arabia, Mohammad and Islam, spread of Islam, the Abbasid and Arabian Empire, the climax of Arabic civilisation, a geographical description of Arabia. Islamic rule and spread of Islam
- (4) The story of Charlemagne, description of the Vandals, Franks etc, victories of Charlemagne, his domination of the Saxons,
- (5) The social system of medieval Europe :—the ways of life of the lords and the nobles, knighthood, the feudal system, the Crusades.
- (6) The rise of the Turks, the spread of Islam into India, the fall of the Arabian Empire and the rise of the new kingdoms.
- (7) Empire-building by the Mongols, Marco Polo's travels.
- (8) The Turkish Empire and the fall of Constantinople.

(Recorded by Manju Sinha Roy)

The section prepared the following lesson plan for class VII

Subject ;— Life in Europe in the Middle ages.

Objectives :—(1) To enable the students to see that historical and geographical aspects of life are dynamically inter-related by causal relationship, that in all epochs of time, man has been a vital part of society making and being made by it ; to enable them to obtain a true perspective of their relationship with the environment of the present and the past, to develop social instincts and help in emotional integration.

(2) To teach through problem-solving in pupil-teacher co-operation , to develop critical thinking and rational judgement as well as initiative and co-operation through learning group activity.

(3) To make the students understand the problems of the people of Europe in the middle ages, to lead them to think about the whats, hows and whys of these days , to help them to study of cultures of the times and to compare and contrast with our own.

(4) To help them to collect factual information to analyse problems—geographical, social, political and historical.

(5) To engage them in various activities viz—collecting and collating of facts and pictures, visiting museums and galleries, seeing films etc.

(6) To enable them to develop skills of comprehension, collection, collation and verbal and visual expression.

The following steps were recommended for carrying on the study :—

- (a) Study of the geography of Europe—Physical, political (medieval or present) and human.
- (b) Use of aids like maps, models, pictures etc.

- (c) Activities:— making maps. scrapbooks & charts, writing reports and descriptions etc. The subject-area was divided into the following units for the convenience of study :

Unit I :—

- (a) Feudalism—its meaning and causes, its levels and functions at different levels—kings, nobles, serfs. Relation with landed property and power.
Problems—Was feudalism socially necessary? Was it a unique characteristic of medieval Europe? What was the crucial factor—land or power? Is feudalism possible in the machine age?
- (b) Comparison with India—analysis of the social conditions of rural India, the nature of the zamindari system.
Problems—Has the abolition of Zamindari been effective in India?
What is the position of domestic servants in our country? How can our country equalise Europe in progress?

Unit II :—

Details of the European Feudal system—

- (a) Qualities of the nobles and the knights, chivalry, treatment of serfs.
- (b) Clergy—power and influence over nobility, service to the cause of learning and the poor, genuineness of their profession.
Comparison with Indian priests and missionary bodies whether they served any useful purpose in society.
- (c) Serfs—their way of life, lack of amenities and enjoyments, peasantry. Comparison with India and modern Europe.

Unit III :—

Cultural life—

- (a) Centres of learning—agencies and modes of teaching, relationship between the churches and education. Comparison with India.
- (b) Schools of thought and famous men.
- (c) Local—language literatures, troubadours.
Comparison with singing poets of India,
- (d) Gothic architecture—cathedrals. Comparison with Indian architecture.

Unit IV :—

The Crusades.

- (a) Causes and characteristics: the first united European effort and joint action of different classes of people in society (clergy, nobility, peasantry)—a people's war: the spirit of sacrifice and fellow-feeling—a Christian spirit.
- (b) Comparison between Richard and Saladin.
- (c) Effects—failure of the main objective, i. e. the liberation of the Holy Land:
Other outcomes: cultural contacts between the East and the West, increased knowledge of Geography leading to a search for new lands and sea routes, growth

of trade and commerce and the big cities, the rise of the merchant class, blow to feudalism.

The following activities have been recommended in connection with the four units of study.

- (a) Drawing maps of Eurasia showing different countries taking part in the Crusades, the different routes taken by the Crusaders in travelling from Europe to Jerusalem and the trading centers of Venice and Genoa.
- (b) Collecting pictures of the Crusaders, Popes, Emperors, Kings, Jerusalem, the important European cities of the middle ages etc to prepare charts and scrap books.
- (c) Seeing a film about the Crusades.

For evaluation, it was suggested that periodic assessment would be held with the help of different types of test. The following test items were prepared to serve as examples—

- (1) Compare the feudal system of Europe with the Zemindary system of India and state whether there were similarities between the two.
- (2) Describe the life of the peasants in Europe and India in the medieval and modern times.
- (3) Describe the way of life of the citizens of Europe in the middle ages.

B. Short answer :— (answer each question with one short paragraph only)

- (1) (a) The threat of the external enemies and the insecurity of life were responsible for the development of the feudal system in Europe.
- (b) The development of agriculture in the low-lying lands in the plains of Europe encouraged the growth of feudalism.—Which of the above was the real cause of the development of feudalism in Europe? Do you consider that both were causes?
- 2 (a) The clergy were preachers of truth, knowledge and the ideals of service to the poor.
- (b) The monasteries were seats of learning.
- (c) The clergy were part of the landed ruling class and makers of monarchs. Do you think all the above statements are true? If so, how was it possible to reconcile the three functions?
- (3) The Crusades were Holy wars.
Can war be holy?
- (4) Jesus Christ preached love for the enemy.
Do the modern Christians follow this ideal?
- (5) (a) What were the qualities of knights? How were knights made?
- (b) What was the difference between a castle and a manor house?
- (c) Describe the inside of a castle.
- (d) Give the names of the most important European universities of the middle ages.

(6) Write short notes on the following—Magna Carta, Chaucer, Chivalry.

C Objective type—

1. True—false, Some of the statements given below are true and some are false, write × in the brackets next to the false answers and ✓ in the brackets next to the true answers.

- (a) The feudal nobles worked for themselves. ()
- (b) Pages were servants of noblemen. ()
- (c) Knights were selfish and did not care for others. ()
- (d) Tournaments were held to test the administrative abilities of the nobles. ()
- (e) Serfs were slaves of the nobles. ()
- (f) Guilds were organisations of traders. ()
- (g) Manors were houses of farmers. ()
- (h) The abbot was the monk in charge of a monastery. ()
- (i) Roger Bacon was a religious man.
- (j) The Crusades were fought to stop wars

1. Multiple choice :— Three answers are given to each of the questions given below strike out the wrong answer leaving the right one in each case.

- a) The owners of all land in the middle ages in Europe were—
 - (a) The Kings.
 - (b) The nobles
 - (c) The common people.
- b) Tapestry is—
 - (a) A method of hanging pictures on the wall.
 - (b) A type of embroidery on thick cloth,
 - (c) Laying straw on the floor of a room.
- c) The work of the knights was—
 - (a) To show physical feats,
 - (b) To be hereditary soldiers.
 - (c) To punish wrong doers.
- (d) All commodities used in the middle ages in Europe
 - (a) were made in the villages,
 - (b) " " " towns,
 - (c) were imported from countries outside Europe

4. Fill up the gaps with one suitable word in each case :—

- a) Cultivators in the middle ages in Europe were called.....
- b) was not available in the winter in Europe.
- c) Oxford was famous in the middle ages for the teaching of.....
- d) A..... is a place of worship for Christians.

5. Answer the following questions in one word or one sentence only.

- a) What was the name of the administrator of a town in medieval Europe ?
- b) What was the punishment for dishonest traders in medieval Europe ?
- c) In medieval Europe whose command was supreme in religious matters ?

- d) What are those who take to monastic life called ?
6. A few names have been given in the left column and the descriptions are scattered in the right hand column. Write the names in the brackets by the side of the correct descriptions in the right hand column—

Robin Hood.	A famous	Scientist ()
Roger Bacon.	„ „	Philosopher ()
Dante	„ „	benevolent robber. ()
Abelard	„	man who fought the Turks. ()
Peter	„	great poet. ()

(Reported by Padma Ghose
& Manju Sinha Roy)

Work of Section C.

The section prepared the following syllabus of studies and suggested for class VIII :—

- 1) Geographical and historical description of North America— (a) geographical position, natural wealth and climate.
- b) Colonisation of North America and achievement of independence.
- c) The American people. Slavery and the emancipation of slaves, their present position.
- 2) The French Revolution and the Geography of France.
- 3) Political revolution in England in the 17th century ; the Industrial Revolution : a Geographical description of the country,
- 4) Geographical description of Germany. German unification.
- 5) Geographical description of Russia. The Russian Revolution and the establishment of the U. S. S. R.

The following units of study were prepared by the section as a sample—

- a) Geographical background of North America.
- b) The American War of Independence,

Objectives —

In addition to the General objectives : the students will be enabled to develop feelings of national pride and social and democratic consciousness. Method of teaching :—

- a) As a kick-off measure, questions may be asked about some famous explorers, their reasons for exploration and the countries they had discovered, leading to a discussion about the discovery of America.
- b) Then the teacher may sketch a map of North America on the B. B. and use a physical map to show the five natural divisions of the country.
- c) Detailed work will be done on the geographical features of those parts including mountains, highland, plateaux, rivers, lakes, the coast lines, the climate, vegetation, agricultural, mineral and forest products and the people.
- d) The types of the people of the country will be discussed and the story of the War of Independence will be told.

- e) Connection with English history will be brought out.
- f) A brief general survey of the modern conditions of the U.S.A. and Canada will be made.

The section also prepared some sample questions as given below :—

A. Essay Type—

- 1) State the reasons for the colonisation of North America.
- 2) What was the relationship of the colonies with England ?
- 3) Why did the Pioneers establish themselves on the Eastern coast of America ?
- 4) North America is rich in mineral, forest and agricultural products and colonisers had been attracted by all this———". Explain the significance of the statement.
- 5) "No taxation with out representaiiion"—analyse the staement. What was the colony under reference. Was the demand justified ?

Objective Type—

- 1) Two lists of names have been given below, in each case strike out one name that does not match with the others.
 - a) Wheat, maize, corn, cotton.
 - b) Coal, iron, manganeze, copper, petrol, lead.
- 2) Several answers have been given to to each question below, put a circle round the correct answer in each case—
 - a) America was first colonised—
 - On the North
 - „ „ South coast
 - „ „ East „
 - „ „ highlands of the West,
 - b) The real cause for the Amercan War of Independence was—
 - Geographical discoveries.
 - Oppression by the British,
 - Desire for freedom.
 - War between England and France.
 - Establishment of trade with new countries.

THE END.

LIST OF PARTICIPANTS

Pujah Vacation Courses—4.14 Nov. '63

1. Cumulative Record Cards.

Bethune Collegiate School

Tutul Guha,

Brahmo Balika Siksalaya

Tatini Adhya

Gayatri Das

Chandrabhag Srikrishna Girls' H. S. School.**Howrah.**

Nilima Bhowmic (H)

Daksin Barasat Girls' H. School

Gita Banerjee

Deshapran Birendranath Institute for Girls

Chitra Dasgupta

Anima Chatterjee

Entally Balika Vidyamandir

Ranu Datta

Kalidhan Institute for Girls

Bela Debi

Khidirpore Milani Girls School

Hena Roy

Mathuranath Girls' School

Sefali Debi

Prafulla Sen Girls' School

Mukti Ganguly

Bithika Banerjee

Anuradha Paul.

Manju Guha Roy (H)

Sarawati Balika Vidyalyaya

Alaka Mitra

Sibpur Bhavani Balika Vidyalyaya

✓ Sisirkana Basu

Sri Aurobindo Balika Vidyalyaya

✓ Basana Maitra

✓ **Surendranath Girls, H. School. Howrah**

Geeta Bhattacharya

✓ **Tarasundari Balika Vidyabhaban. Howrah**

Reba Santra

Kalyani Sinha

II. Social Studies.

Ahiritolla Banga Vivdyalaya

Chameli Kundu

Bangalpur Jyotirmayee Girls' H. School

Durga Bhattacharya (H)

Childern's Sweet Home

Anima Joardar

Charistopher Girls' H. School

Sarbamongala Bhattacharya

Deshapran Birenranath Girls' High School

Bani Dey

Bela Mitra

Indrani Dasgupta

Gangapuri Siksa Sadan for Girls. Tollygunje

Namita Gupta

Kaliagunje M.M. Girls' School

Mira Ghose

Kalidhan Institution for Girls

Kajal Roy Chowdhury

Kalighat Mahakali Pathsala

Arati Mukherjee

Loreto Day School Sealdah

Padma Ghose

Namita Sarkar

Makarda Girls' School, Howrah.

Minati Bose

✓ **Narikeldanga Girls' H. School**

Aparna Bose

✓ **Nebadhai Balika Vidyalaya**

Manisha Halder

✓ **New Barrackpore Girls' School**

Kalpana Roy

✓ **Prafulla Sen Girls' H. School**

Pratima Dutta

Rama Bakshi

✓ **Rahara Bhabanath Girls' School**

Nandita Mukherjee

✓ **Rastriya H. S. M. P. School. 24 Pargnas**

Santa Paul

✓ **Saratchandra Paul H. S. School**

Bani Biswas

✓ **Sibpur Bhabani Balika Vidyalaya**

Gayatri Bhattacharya

✓ **Sri Aurobindo Balika Vidyalaya**

Alta Roy Chowdhury

✓ **Sundarban Balika Vidyaniketan. Kakdwip**

Manju Sinha Roy.

BOOK REVIEW

Dance in Elementary Education By Ruth Lovell Murray. Published by Harper & Bros, New York, Evanston, and London. Price 6. 90.

According to the modern educational objectives and philosophy, dance contributes to the total school experience—physical, emotional, social, intellectual, and specially creative.

Dance makes an appeal that is different from that of other activities. It differs also, in that it offers rich opportunities for creative expression. Dance is one of the best expressions of pure play and perhaps is the most liberal of all forms of motor education. Dance can enhance the very soul and bring about a feeling of harmony between body and mind.

This book has been written by a specialist in the field of dance education in the light of modern concepts of Dance and education. All aspects of dance and methods teaching have been thoroughly treated.

Teachers should find the book valuable, because it outlines materials to be included in a complete programme of educational dance, and because it may instil enthusiasm for the importance of dance in the education of children.

Particularly the teachers of dance education can profitably use this book as a guide and handbook for teaching rhythmic movements from primary stages to college.

K. K. Dutta,
Chief Inspector of Physical Education,
West Bengal,

REVIEW OF WORK

Apart from our normal routine activities the main programme undertaken during the quarter ending December 1963 was the Pujah Vacation training Course, held from the 4th to the 14th November, 1963, on Social Studies and the Maintenance of Cumulative Record Cards in which 47 teachers from 37 schools participated. A report on the course on social studies appears in this issue and we hope that the details of plans, materials and questions prepared by the participants will be useful for all teachers of the subject.

This short note has to end here because the Pujah Holidays which took a large chunk off our working time, followed by the usual season of India level meetings and conferences, left most normally sober people, including ourselves, in no mood for sticking their noses into desks.

Kalyani Karlekar

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I, Kalyani Karlekar, hereby declare that the particulars given above are true to the best of my knowledge and belief.

K. KARLEKAR

SUBSCRIBE TO—

TEACHER EDUCATION—Quarterly Journal.

Published by the Directorate of Extension Programmes for Secondary Education.

(National Council of Educational Research and Training)

7-A, Lancer's Road, Delhi-6.

Annual subscription Rs. 3/-only.

SUBSCRIBE TO—

“SCHOOL SCIENCE”

A quarterly journal for school science teachers Published by the Department of Science Education.

National Council of Educational Research and Training,
114, Sunder Nagar, New Delhi.

শ্রাবণী

সপ্তম বর্ষ

১৩৭০

মহিলা শিক্ষণ-শিক্ষা মহাবিদ্যালয়
প্রসার বিভাগের মুদ্রাপত্র

শ্রাবণী

সপ্তম বর্ষ

১৩৭০

অভ্যর্থনা

(১৯৬৩, ভাদ্রয়ারী মাসে শিক্ষাসপ্তাহে প্রদত্ত ভাষণ)

ইনস্টিটিউট অব এডুকেশন ফর উইমেনের অষ্টম বার্ষিক মিলনোৎসবে সকলকে অভ্যর্থনা জানাচ্ছি।

ডেভিড হেয়ার ট্রেনিং কলেজের মহিলা বিভাগে ১৯৫৪ সালের ১লা জুলাই পরিবর্তিত হয়ে পৃথক মহাবিদ্যালয়ে রূপান্তরিত হয়েছিল। অবশ্য এখনও দুই কলেজের মধ্যে আর্থিক যোগ আছে, আমরা অনেক বিষয়ে সহযোগিতা করি। ভারতের প্রবীণতম শিক্ষণ শিক্ষা মহাবিদ্যালয়ের দৃঢ়-প্রতিষ্ঠিত ঐতিহ্যকে ভিত্তি করে আমরা বিংশ শতাব্দীর স্বাধীন গণতন্ত্রের উপযোগী নতুন আদর্শে আমাদের এই মহাবিদ্যালয় গড়ে তুলবার চেষ্টা করছি। স্বযোগ্য অধ্যাপিকামণ্ডলী ও সুপরিচালিত প্রসার বিভাগ আমাদের প্রধান পাথেয় আর আছে হেষ্টিংস হাউসের বিস্তীর্ণ উদ্যান ও সুরমা অট্টালিকা। পঠনপাঠনের মান অক্ষর রেখেও আমরা ছাত্রীদের সর্বাঙ্গীন শিক্ষার জগ্ন নিয়মিতভাবে সঙ্গীত ও নাট্যাভিযান, ক্রীড়া ও শিল্পকলা চর্চা, বিতর্ক-আলোচনা, ছায়াচিত্র ও ভ্রমণ এবং বায়িক প্রদর্শনী ও শিক্ষাসপ্তাহের ব্যবস্থা করেছি। এর জগ্ন ছাত্রী এবং অধ্যাপিকাদের কিছুটা অতিরিক্ত পরিশ্রম করতে হয় সন্দেহ নাই। কিন্তু পরিপূর্ণতর শিক্ষার মধ্য দিয়ে তাঁদের শ্রম সার্থক হয় বলেই আমাদের আন্তরিক বিশ্বাস।

আনন্দের সঙ্গে জানাচ্ছি যে ১৯৬২ সালের বি, টি, পরীক্ষার ফলাফলও অজ্ঞাত বারের মতন সন্তোষজনক হয়েছে। প্রথম শ্রেণীতে শ্রীমতী মুক্তি চক্রবর্তী দ্বিতীয় ও ত্রীণ চ্যাটার্জি সপ্তম স্থান অধিকার করেছেন। তাছাড়াও ফার্স্ট ক্লাস পেয়েছেন দেবী চক্রবর্তী, প্রতিমা চৌধুরী, স্মৃতি দাশগুপ্ত, গীতা বসু, সবিতা ঘোষ, তপতী দত্ত ও লক্ষ্মী আয়ার। বিশ্ববিদ্যালয়ের সাফল্যের হার যেখানে ৮২% আমাদের ৯৬% সাফল্য লাভ হয়েছে। সকলকে আন্তরিক অভিনন্দন জানাচ্ছি।

এ বৎসর আমাদের মিলনোৎসব অনুষ্ঠিত হচ্ছে দেশের এক বিশেষ সংঘর্ষের দিনে। ভারতবর্ষের সীমান্ত প্রদেশে হিংস্র ও বর্বরভাবে চৈনিক বাহিনীর আক্রমণের বিরুদ্ধে সমগ্র দেশের একতাবদ্ধ প্রতিরোধপ্রচেষ্টার সঙ্গে আমাদের ক্ষুদ্র শক্তিটুকুও যোগ করলাম। বিশদ বিবরণ ছাত্রী সম্পাদিকার বিবৃতির মধ্যে পেয়েছেন।

তা সত্ত্বেও আমরা আজ অনুভব করছি যে শিক্ষণ-শিক্ষা মহাবিদ্যালয়ের পক্ষে এই কাজ অথবা এই ধরণের কাজ ঘণ্টে নয়। যদিও কেবলমাত্র সশস্ত্র সৈনিকেরাই প্রত্যক্ষ রণক্ষেত্রে যুদ্ধ করে, তবু পরোক্ষভাবে প্রত্যেকটি দেশবাসী একতাবদ্ধ হয়ে সাহস, ধৈর্য ও দৃঢ়তার সঙ্গে কষ্ট ও ত্যাগ স্বীকার করে তাদের সহায়তা করলে তবেই তারা সফল হতে পারে। এই দৃঢ় চরিত্রবল দেশবাসী কোথায় পাবে? দেশের এই ভবিষ্যত নাগরিকদের দ্বারা গড়ে তুলবেন তাঁদের কর্তব্য সকল সময়েই গুরুত্বপূর্ণ এবং দেশের সংকটের দিনে তা অপরিণীম। তাহলে এই শিক্ষকেরা যেখানে শিক্ষা পেয়ে কর্তব্য সম্পাদনের পাথেয় সংগ্রহ করবেন সেই ট্রেনিং কলেজের দায়িত্ব সবচেয়ে বেশী।

যদি বিশেষ করে আমাদের কথাই বলি। মাত্র আট বৎসর হল এই মহাবিদ্যালয়টি পৃথকভাবে প্রতিষ্ঠিত হয়েছে তবু এর মধ্যেই সহস্রাবিক শিক্ষিকা শিক্ষা নিয়ে সমস্ত দেশের ষাট শত বিদ্যালয়ে ছড়িয়ে পড়েছেন। তার আগে ডেভিড হেয়ার ট্রেনিং কলেজ থেকে পাশ করে বেরিয়েছেন আরো কয়েক শত।

শিক্ষণ-শিক্ষা-মহাবিদ্যালয়ের কাজ ঠিক সাধারণ কলেজের কাজের মতন নয়, আমাদের প্রসার বিভাগ আছে। এখানে শিক্ষালাভ করে দ্বারা চলে যান, তাঁদের সঙ্গে আমাদের বোগস্বত্র ছিন্ন হয়ে যায় না। প্রসার বিভাগের মাধ্যমে তাঁদের ও দেশের অন্যান্য শিক্ষকদের সঙ্গে যোগ রেখে মাধ্যমিক শিক্ষার উন্নতির জন্য কাজ করা আমাদের একটি বিশেষ গুরু দায়িত্ব। শিক্ষাক্ষেত্রের সকল সমস্যায় আমরা তাঁদের নিয়ে আলোচনা সভা, রিফ্রেশার কোর্স ইত্যাদির ব্যবস্থা করি।

গত মাসে শ্রীমতী কল্যাণী কার্লেকরের সংগঠনে আমাদের প্রসার বিভাগ বালিগঞ্জ ও হাওড়ার বিভিন্ন অঞ্চলের মাধ্যমিক বিদ্যালয়গুলির সহযোগিতায় ছোট ছোট সভা করে বর্তমান পরিস্থিতিতে ছাত্রী ও শিক্ষিকাদের কতবা ও সমস্যা সম্বন্ধে আলোচনা করেছে। ৮৭টি বিদ্যালয়ের ছয় শতাব্দিক শিক্ষিকা ও প্রধানা শিক্ষিকা এতে সক্রিয় অংশ গ্রহণ করেছিলেন। এঁরা নিজ নিজ প্রতিষ্ঠানে জাতীয় প্রতিরক্ষা ভাণ্ডারের জন্য অর্থ সংগ্রহ করেছেন। প্রাথমিক চিকিৎসা, এন সি সি, শরীর চর্চা, দেশায়বোধক সঙ্গীত ইত্যাদির প্রবর্তন করেছেন।

জাতীয় সংকটের দিনে এঁরা বিশেষভাবে উপলব্ধি করেছেন যে ছাত্রছাত্রীদের আরো ভাল করে গড়ে তুলবার দায়িত্ব আজ শিক্ষক সমাজকে গ্রহণ করতে হবে। কিভাবে একাজ সম্পাদন করা যাবে, এর জন্য শিক্ষকের বিশেষ কোনও প্রস্তুতির প্রয়োজন কিনা, পাঠ্যক্রম ও পুস্তকের কোনও প্রয়োজন আবশ্যক হবে কিনা এই প্রশ্ন অনেকের মনেই আজ জেগেছে।

সত্যিই আজ দেশের সংকটের সময় শিক্ষার গুরুত্ব ও শিক্ষার দায়িত্ব বজাঙ্গণ বৃদ্ধি পেয়েছে। আজ ১৫ বৎসরের অধিককাল হল আমাদের দেশ স্বাধীনতা লাভ করেছে। আবার গণতান্ত্রিক সাধারণতন্ত্রের আদর্শ জাতীয় জীবনে গ্রহণ করেছে এবং একটির পর একটি পঞ্চবার্ষিকী পরিকল্পনার মধ্য দিয়ে অর্থনৈতিক উন্নতির পথে অগ্রসর হচ্ছে। আজ বারা বিদ্যালয়ের ছাত্রছাত্রী, এই স্বাধীনতা অর্জনের ইতিহাস দ্বারা প্রভাবিত করে জানেনি কিন্তু এত বড় একটা দেশকে গঠন ও রক্ষণ করবার দায়িত্ব তাদের গ্রহণ করতে হবে, তাদের উপযুক্ত পাথেয় কি আমরা আমাদের শিক্ষাব্যবস্থার মধ্যে দিতে পারছি?

কথিত আছে যে ওটাচারল্‌ যুদ্ধের ফলাফল নির্ধারিত হয়েছিল ইটন-হারো বিদ্যালয়ের খেলার মাঠে। তার নামে এই সকল বিদ্যালয়ে অবশ্যই স্মরণ কৌশল শিক্ষা দেওয়া হয়নি। কিন্তু দৈনন্দিন পড়াশুনা কাজকর্মের মধ্য দিয়েই দেশের ছেলেদের চরিত্র এমন দৃঢ়তা ও শক্তি লাভ করেছিল যে তারা সকলক্ষেত্রেই অপরাজয় হয়েছিল।

আমার মনে হয় যে আমাদেরও আজ বিদ্যালয়ের মধ্য দিয়েই ছেলেমেয়েদের উদ্বুদ্ধ করতে হবে। তার মানে এট নয় যে বিবিধ পাঠ্য বিষয়ের সঙ্গে দেশায়বোধ নামে একটি নতুন বিষয় যোগ করতে হবে। প্রয়োজন মতন পাঠ্যক্রম ও পুস্তকের কিছুটা পরিবর্তন করতে হবে বৈকি। কিন্তু সবচেয়ে আরো কতগুলি বিষয় সম্বন্ধে আমাদের মনোভাবের পরিবর্তন করতে হবে। পাঠ্যক্রমের পরিবর্তনের জন্য অপেক্ষা না করে এখন থেকেই আমরা

বর্তমান সিলেবাসের মধ্য দিয়ে স্বাদেশিকতা এবং নাগরিকতা শিক্ষা দিতে পারি যদি পঠন-পাঠন ও পরীক্ষায় পদ্ধতির সংস্কার সাধন করতে পারি।

আমরা ছেলেমেয়েদের বিশ্বইতিহাস পড়াই, কিন্তু প্রত্যেক শ্রেণীতেই ভারতবর্ষের বিভিন্ন যুগের ইতিহাস পড়তে হয় অষ্টমশ্রেণীতে ভারতবর্ষের স্বাধীনতা লাভেরও পরবর্তী ইতিহাস পাঠ্য আছে। সমাজবিজ্ঞা পাঠ্যক্রমের মধ্যে নতুন সংবিধান এবং ইংরাজি পাঠ্য বই We Plan For Prosperityর সাহায্যে পঞ্চবার্ষিকী পরিকল্পনা সম্বন্ধে পড়াবার কথা।

এই সবে মধ্য দিয়ে কেন আমরা আমাদের দেশের মহৎ ঐতিহ্য ও আদর্শ সম্বন্ধে ছেলেদের সচেতন করতে পারব না? স্বাধীনতা অর্জনের গৌরবময় ইতিহাস, নতুন সংবিধান ও গণতন্ত্রের উন্নত আদর্শ, স্বাধীন ভারতের অপ্রতিহত অগ্রগতি—এ সবই কেন আমরা দেশের কিশোর কিশোরীদের সামনে এমন উজ্জলভাবে ফুটিয়ে তুলতে পারব না, যাতে তারা তার মধ্য থেকে নতুন ভারত গঠনের উপযুক্ত উদ্বীপনা ও প্রেরণা লাভ করতে পারে?

কিন্তু এটা আমরা পারছি না—এবং তার মস্ত বড় কারণ হল যে আমরা প্রধানতঃ পরীক্ষার দিকে লক্ষ্য রেখে এবং পাঠ্য পুস্তককে কেন্দ্র করে তথ্য শেখাই এবং বুঝে বা না বুঝেই ছেলেরা সেগুলি কণ্ঠস্থ করে পরীক্ষার খাতায় লেখে। বড় ছাত্র নাগরিকের কর্তব্য সম্বন্ধে আমরা তাদের মনোপদেশ দিই। কিন্তু কেবল এই রকম পড়া শেখালে ও পরীক্ষা লেখানোর মধ্য দিয়ে দায়িত্বশীল ও কর্তব্যপরায়ণ নাগরিকের চরিত্র গড়ে তোলা সম্ভবপর নয়। এইভাবেই কি পড়াতে ও পরীক্ষা নিতে আমরা বাধ্য? বাস্তবিকপক্ষে এসব বিষয়ই বিদ্যালয়ের নিজস্ব পরীক্ষার অন্তর্গত, এর সঙ্গে কোনও স্কুল ফাইনাল পরীক্ষার কোন সন্দেহ নাই। এগুলি যে গতানুগতিক ভাবেই পড়াতে ও পরীক্ষা করতে হবে এমন কোন বিধিনিষেধ নাই।

ছেলেমেয়েদের স্বকুমার চিন্তাগুলি যখন ক্রমে ক্রমে বিকশিত হয়ে উঠতে থাকে তখন তাদের প্রতিদিনের ও সারা বৎসরের পড়াশুনা ও কাজকর্মের মধ্যে নিয়মিত পাঠ্যক্রম, আলোচনা সভা, দেশাত্মবোধক সাহিত্য ও সঙ্গীতের চর্চায় পাঠ্যপুস্তকের বাইরে নানা বই, পুস্তিকা ও পত্রিকার সাহায্যে, বিভিন্ন উৎসব অহুষ্ঠান, জাতীয় দিবস পালনের সময় সঙ্গীত, নাটক, ছবি, পোষ্টার ও প্রদর্শনীর মাধ্যমে তাদের মধ্যে দেশাত্মবোধ ক্রমে দৃঢ় প্রতিষ্ঠিত করা যেতে পারে। তাদের নেতৃত্ব দিয়ে, দায়িত্ব দিয়ে তাদের দায়িত্ববোধ জাগিয়ে তোলা যেতে পারে।

অবিলম্বে এবিষয়ে ভাল করে আলোচনা এবং বিবেচনা করে দেখা উচিত বলে আমরা মনে করি।

শিক্ষায় উপরের আদর্শ এবং নীতির সঙ্গে এই প্রস্তাবের কোনও বিরোধ নেই। যারা ইতিহাস, সমাজবিজ্ঞান বা সাহিত্য পড়ানোর পদ্ধতি সম্বন্ধে আলোচনা করেন, তাঁরা নিশ্চয়ই স্বীকার করবেন যে কেবলমাত্র তথ্য কণ্ঠস্থ করানোই প্রকৃত উদ্দেশ্য নয়, চরিত্রগঠন ও কতগুলি মানবিক মূল্যবোধ জাগিয়ে তোলার গুরুত্ব অনেক বেশী। আমাদের দেশের আদর্শ এত উদার, মহান ও মানবিক যে তার মধ্য দিয়ে সংকীর্ণ গোঁড়ামির সৃষ্টি হবার সম্ভাবনা নিতান্তই কম।

মনোবিজ্ঞানীরা স্বীকার করবেন যে মানুষের চরিত্র গড়ে তুলবার জহা সর্বপ্রথমে যেমন আত্মমর্যাদা বোধের প্রয়োজন তেমনি আবশ্যিক দেশাত্মবোধের। এর সঙ্গে আনুজ্ঞাতিকতার কোনও বিরোধ নেই বরঞ্চ আনুজ্ঞাতিকতার যথার্থ দৃঢ়ভিত্তি হল উদার এবং গভীর দেশপ্রেম।

সর্বশেষে আমি বিশেষভাবে এই কথাই আপনাদের সকলের কাছে নিবেদন করতে চাই যে আজ দেশের সীমান্ত প্রদেশে একটি কঠিন যুদ্ধ বেধেছে বলেই যে কেবল ছেলেদের মনে দেশাত্মবোধ জাগাতে হবে, এই ধারণা অত্যন্ত ভুল। এটা কোনও বিশেষ অবস্থার সাময়িক প্রয়োজনের জহা সংকীর্ণ বা প্রতিক্রিয়াশীল পরিকল্পনা নয়।

ইংলণ্ড, আমেরিকা বা পৃথিবীর অন্য যে কোনও প্রগতিশীল স্বাধীন দেশের ছেলেমেয়েরা এদের বিদ্যালয়ের পঠন-পাঠন কাজকর্মের মধ্য দিয়েই দেশের আদর্শ, ঐতিহ্য ও ইতিহাস সম্বন্ধে সচেতন হয়ে ওঠে। নাগরিকের

কর্তব্য ও দায়িত্ব পালন করতে শেখে। আমাদের দেশেও এই সমস্ত কিছু তার স্থায়ী শিক্ষা মূল্যের জগুই শিক্ষাক্ষেত্রে গ্রহণ করতে হবে, কোনও একটা সাময়িক হজুগের জগু নয়।

আমার মনে হয় যে এবিষয়ে আমরা হয় তো কিছুটা উদাসীন হয়ে পড়েছিলাম।

নানাদেশের শিক্ষার ইতিহাসে অনেক সময়েই দেখা গেছে যে বড় বড় যুদ্ধবিগ্রহের সময় চিন্তাশীল শিক্ষাবিদগণ দেশের শিক্ষা সম্বন্ধে আরো গভীরভাবে চিন্তা করছেন এবং নতুন করে শিক্ষা সংস্কার পরিকল্পনা রচিত হয়েছে। তেমনি আমরাও আজ দেশের এক সংকটের মুহূর্তে আমাদের শিক্ষার কয়েকটি ক্রটি সম্বন্ধে অবহিত হয়েছি। কিন্তু, সচেতন যখন একবার হয়েছি তখন আর এবিষয়ে উদাসীন থাকলে চলবে না—এখন যথোপযুক্ত ব্যবস্থা গ্রহণ করতে হবে।

নলিনী দাস

হেথায় আর্ঘ্য, হেথা অনাৰ্ঘ্য
হেথায় জাবিড়, চীন—
শক-হুন-দল পাঠান মোগল
এক দেহে হল লীন।

পশ্চিম আজি খুলিয়াছে দ্বার
সেথা হতে সবে আনে উপহার,
দিবে আর নিবে, মিলাবে মিলিবে
যাবে না ফিরে,
এই ভারতের মহামানবের
সাগর তীরে।

রবীন্দ্রনাথের শিক্ষাচিন্তা

(১৯৬২ খৃষ্টাব্দের শিক্ষাসপ্তাহে শ্রীঅমিয়কুমার সেনের ভাষণ অবলম্বনে)

১৯৪৪ বা ৪৫ সালে কোনো আমেরিকান শিক্ষাবিদ রবীন্দ্রনাথের শান্তিনিকেতন পরিদর্শনকালে তাঁকে জিজ্ঞাসা করেছিলেন—শান্তিনিকেতনের শিক্ষার সার্থকতা কি? রবীন্দ্রনাথ তখন তাঁকে বলেন যে প্রত্যেক ছাত্রছাত্রীর মধ্যে যে বিশেষ সম্ভাবনা আছে তার পরিপূর্ণ বিকাশসাধনই এই প্রতিষ্ঠানের কাজ। এই কাজের জন্ত তিনি যে তিনটি সহায় অবলম্বন করেছিলেন তা হ'ল প্রকৃতি, শিক্ষক ও আনন্দ।

তিনি চরিত্র গঠনের সময়ে প্রকৃতির সংগে ঘনিষ্ঠ সম্পর্ক স্থাপনকে শিক্ষার অপরিহার্য অংশ বলে বিশ্বাস করতেন। শান্তিনিকেতনে গাছের তলায় কাজ করার সময়ে তিনি প্রকৃতির মধ্যে তার জীবনদর্শন খুঁজে পান। পাশ্চাত্যদেশে দৈহিক ও মানসিক স্বাস্থ্যের জন্ত প্রকৃতির মধ্যে শিক্ষাদানের ব্যবস্থা করা হয়, কিন্তু রবীন্দ্রনাথ মনে করতেন যে প্রকৃতির সান্নিধ্যে মানুষের আত্মার ব্যাপ্তি ঘটে বলেই মানুষ যোগ্যতর মানুষ ও নাগরিক হয়ে ওঠে।

প্রাকৃতিক পরিবেশের পর শিক্ষকের কথা। রবীন্দ্রনাথ নিজে শিক্ষক ছিলেন। অনেকের ধারণা যে বিষয়বস্তু সম্বন্ধে জ্ঞান থাকলে এবং সেই জ্ঞান ছাত্রদের মধ্যে বিতরণ করতে পারলেই ভালো শিক্ষক হওয়া যায়, কিন্তু রবীন্দ্রনাথ বলতেন যেমন এক দীপশিখা থেকে আরেক দীপশিখা জ্বলে ওঠে তেমনি শিক্ষকের জীবনের আলোক নিয়ে ছাত্রদের জীবনের আলো জ্বলে। অর্থাৎ শিক্ষকের সমস্ত জীবন ছাত্রদের সামনে আদর্শরূপে প্রতিভাত হবে।

রবীন্দ্রনাথের শিক্ষাধারায় “আনন্দ” একটা প্রধান স্থান অধিকার করেছে। যেখানে আমাদের বিদ্যালয়-গুলিতে পুথিগত বিদ্যাকেই প্রধান স্থান দেওয়া হয়ে থাকে সেখানে রবীন্দ্রনাথ বলতেন যে শিক্ষার মধ্যে দিয়ে আনন্দকে উপলব্ধি করতে হবে। কেবল কথার মধ্য দিয়ে মানুষ নিজের সম্ভাব্য প্রকাশ করতে পারে না। তার জন্ত চাই নৃত্য, সুর, সংগীত, ছন্দ ও চিত্র। আত্মপ্রকাশের জন্ত এই সবগুলিরই দরকার, নতুবা আমাদের পংপুত্ব ঘুচে না। শুধু বিদ্যালয়ে নয়, মহাবিদ্যালয়েও আনন্দের মধ্য দিয়ে শিক্ষা দিতে হবে।

তপোবনের আদর্শের যে তিনি পুনঃপ্রতিষ্ঠা চেয়েছিলেন, সে-কথা আংশিকভাবে মাত্র সত্য, বস্তুত তাঁর আদর্শ ছিল আরো বড়। রবীন্দ্রনাথের শিক্ষাতত্ত্বের অনেক অংশ তখন পাশ্চাত্য দেশেও স্বীকৃত হয়নি। মাদাম মন্তেসরিয়ার মতো ইন্ডিয়ের শিক্ষা তিনি শান্তিনিকেতনে প্রবর্তিত করেন। খেলার মধ্যে দিয়ে ইন্দ্রিয়শক্তির পরিশীলনের জন্ত ছেলেদের বাইরে নিয়ে যাওয়া হ'ত, চোখ বাঁধা অবস্থায় ফুলপাতার গন্ধ শুঁকে তারা গাছের পরিশীলনের জন্ত ছেলেদের বাইরে নিয়ে যাওয়া হ'ত, চোখ বাঁধা অবস্থায় ফুলপাতার গন্ধ শুঁকে তারা গাছের পরিশীলনের জন্ত ছেলেদের বাইরে নিয়ে যাওয়া হ'ত, চোখ বাঁধা অবস্থায় ফুলপাতার গন্ধ শুঁকে তারা গাছের পরিশীলনের জন্ত ছেলেদের বাইরে নিয়ে যাওয়া হ'ত, চোখ বাঁধা অবস্থায় ফুলপাতার গন্ধ শুঁকে তারা গাছের পরিশীলনের জন্ত ছেলেদের বাইরে নিয়ে যাওয়া হ'ত।

সংসারী মানুষ অনেক সময়েই ছোটখাট জিনিসকে গ্রাহ্য করে না, আমাদের সংবেদনশীলতা কমে যায় ও আমরা ক্রমশ একটা গভীর মধ্যে আবদ্ধ হয়ে যাই। রবীন্দ্রনাথ পাশ্চাত্য শিক্ষাবিদদের এই বিষয়ে সচেতন হওয়ার আগেই আত্মার এই গভীর সমস্তার কথা চিন্তা করেছিলেন। তিনি পাশ্চাত্যদেশের অনেক বিদ্যালয় দেখেছিলেন বটে কিন্তু তাঁর এই প্রেরণা এক গভীর অন্তর্নিহিত বোধ থেকে উদ্ভূত হয়েছিল। তিনি দেখেছিলেন যে জ্ঞানভাণ্ডার থেকে নানাপ্রকার তথ্য আহরণ করে ছাত্রদের মাথায় ঢুকিয়ে দেওয়াই শিক্ষকদের কর্তব্যোপযুক্ত হয়েছিল এবং তার জন্ত গভীর বেদনা বোধ করেছিলেন।

তিনি বলতেন মানুষের স্বভাব হ'ল ক্রমাগত শিখে চলা। মানুষের মনোকার এই সহজাত প্রবৃত্তির প্রেরণাকে শিক্ষক চিরজাগ্রত করে রাখতে সাহায্য করবেন। কেবল শিক্ষা দেওয়াই তাঁর উদ্দেশ্য হবে না, ছাত্রদের অন্তর্নিহিত গ্রহণক্ষমতাকে পরিণত করে তার দ্বারা তাদের নিজেদের জ্ঞান আহরণে প্রবৃত্ত করাতে হবে। এমন ভাবে তাদের সামনে নতুন নতুন অভিজ্ঞতা স্থাপিত করতে হবে যাতে তারা সেগুলি উপলব্ধি করার জন্য উন্মুখ হয়ে থাকে। ছাত্রের ক্রমান্বিত বৃদ্ধিতে সাহায্য করাই হবে শিক্ষকের কাজ এবং শিক্ষকের কর্তব্যের এই লুপ্ত আদর্শের পুনরুদ্ধারের মূলে ছিলেন এদেশে রবীন্দ্রনাথ।

রবীন্দ্রনাথ ছাত্রদের শাস্তিনিকেতনের প্রকৃতির কোলে স্থাপিত করে নৃত্যগীতাদির মধ্যে নিমগ্নিত করে তাদের মনোবিকাশের সমস্ত পথ নিঃশেষিত করে দেননি, তাদের বিচিত্র বুদ্ধিবৃত্তি ও পরিণতির ধারার কথাও চিন্তা করেছিলেন। বর্তমানের বহুমুখী বিদ্যালয়ের বিভিন্ন শাখার মধ্যে দিয়ে যে বিচিত্র শিক্ষার পরিকল্পনা করা হয়েছে, তার আগে শাস্তিনিকেতনের বিদ্যালয়ী শিক্ষার ধারাতে সেই বৈচিত্র্যের পূর্বগামী ছায়া দেখা গেছিল। মানুষের সহজাত প্রবৃত্তিকে কিভাবে শিক্ষার সাহায্যে জাগিয়ে তোলা যায় তার আলোচনা তিনি করেছিলেন। মানসিক উৎকর্ষের জন্য শিক্ষক ও ছাত্রের মধ্যে যে ঘনিষ্ঠ সম্বন্ধের প্রয়োজন তার প্রতিষ্ঠার উদ্দেশ্যে তিনি উভয়ের মনোকার ব্যবধান গুটিয়ে ফেলতে চেয়েছিলেন। অপরপক্ষে শিক্ষক যাতে নিজের দোষত্রুটিজনিত বিফলতার জন্য ছাত্র বা পরিবেশকে দোষী করবার চেষ্টার পরিবর্তে নিজেদের দোষত্রুটি ও অভিজ্ঞতা থেকে শিক্ষা গ্রহণ করতে পারেন সে বিষয়ে রবীন্দ্রনাথ আলোচনা করেছেন।

ডিসিপ্রিন বা শৃংখলাকে রবীন্দ্রনাথ একটা বাহ্যিক চাপ বলে স্বীকার করতেন না, মানুষের মনের আভ্যন্তরীণ সংঘর্ষে গ্রহণ করতেন। এইজন্য শাস্তিনিকেতনের শিক্ষার শারীরিক শাস্তির ব্যবস্থা ছিল না। জাপানে প্রদত্ত কোনো বক্তৃতায় তিনি এই ভাব প্রকাশ করেছিলেন যে মানবসম্প্রদায় মানুষের যে আদিম ভাব নিয়ে জন্মায় সেই ভাবটিকে মেনে নিয়েই তার প্রথম চোদ-পোনেরো বছরের শিক্ষার ব্যবস্থা করতে হবে। তাঁর দর্শনে ছিল যে, যে বিবর্তনের মধ্যে দিয়ে আদিম বস্তু মানুষ বর্তমান সভ্য মানুষে রূপান্তরিত হয়েছে, শিশুকেও সেই স্তরগুলিকে অতিক্রম করে অগ্রণর হতে হবে এবং এই বিবর্তনের জন্য ইচ্ছা মতো চলার অধিকারের দরকার।

রবীন্দ্রনাথের প্রবর্তিত এমন জীবন্ত শিক্ষার পদ্ধতি কখনো শেষবারের মতো নির্ধারিত করা যেতে পারে না। প্রত্যেক যুগের ও প্রত্যেক ব্যক্তির প্রয়োজনানুযায়ী পদ্ধতি নির্দেশ হবে, আর বিষয়বস্তুর ব্যাপারে তিনি ইতিহাস, ভূগোল, প্রকৃতিপাঠ, বিজ্ঞান প্রভৃতির পৃথক শিক্ষার পরিবর্তে অন্তর্ভুক্তের সমর্থন করতেন। সাধারণ বিদ্যালয়ে শিক্ষণীয় বিষয়ের পার্থক্যের ওপর যে জোর দেওয়া হয় তাতে মানুষের সর্বাঙ্গীন বিকাশ হয় না।

আবার সকলের সব বিষয়ের প্রগতির ধারাও এক হয় না। বিষয়গত পরীক্ষাব্যবস্থায় এক ছাত্র কেবল একটি বিষয়ের নৈপুণ্যের অভাবে পুনর্বার সমস্ত বিনয় পড়তে বাধ্য হয়ে থাকে। এইজন্য শাস্তিনিকেতনে তিনি বিষয়ভিত্তিক শ্রেণী-উন্নয়নের ব্যবস্থা করেছিলেন। অর্থাৎ সে ছাত্র যে-যে বিষয়ে যে শ্রেণীতে পড়ার যোগ্য সেই সেই শ্রেণীতে সে বসবে। এতে প্রথমে কিছু প্রতিকূল অবস্থার সৃষ্টি হলেও ক্রমশ এই পাঁচমিনিশেলি শিক্ষার ব্যবস্থা সম্ভবপর হয়েছিল।

শিক্ষার উদ্দেশ্যের বিষয়েও রবীন্দ্রনাথের সংগম মনোবৃত্তি আত্মপ্রকাশ করেছিল। তিনি বলতেন শিক্ষার উদ্দেশ্য পূর্ণনির্ধারিত হতে পারে না দেওয়া-নেওয়ার মধ্যে দিয়ে বিবর্তিত হয়। এই উদ্দেশ্য তৃতীয়ব্যক্তি বাইরে থেকে চাপিয়ে দিতে পারে না, যে প্রেরণা শিক্ষক-শিক্ষার্থীর জীবনে সত্য হয়ে ওঠে সেটাই শিক্ষার প্রকৃত আদর্শ। শিক্ষার উদ্দেশ্য আগে থেকে ঠিক করে রাখলে সেই লক্ষ্যে পৌঁছাবার খাতিরে শিক্ষার সমুদয় অংগ খরচ হয়ে যেতে পারে। তার মতে স্বাধীনতার বিকাশই হ'ল শিক্ষার মূলতম উদ্দেশ্য।

তিনি দে-দুগে সহশিক্ষার প্রবর্তন করেছিলেন তখন তা সমাজের প্রায় সর্বাংশেই অস্বীকৃত ছিল। এজন্য অনেক নিন্দা সহ্য করেও স্বাধীনতার আদর্শ থেকে তিনি বিচলিত হননি এবং অনেক আকস্মিক দুর্ঘটনায় ব্যথা অল্পভব করলেও মানুষের সাংগঠনিক স্বাধীনতার ওপর বিশ্বাস হারাননি।

(জনৈক ছাত্রীর দ্বারা অনুলিখিত)

“আমেরিকায় গৃহশিক্ষক নেই কেন?”

শান্তি ব্যানার্জি

আমেরিকায় মাধ্যমিক-শিক্ষা-পরিচালনা-ব্যবস্থা জানবার ও দেখবার উদ্দেশ্যে হার্ভার্ড বিশ্ববিদ্যালয়ে ও সেখানে থাকা হল কিছু দিন। আরও পাড়ি দেওয়া হল পূর্ব থেকে পশ্চিম প্রান্তে, মধ্যে বিশেষ বিশেষ জায়গাগুলো ছুঁয়ে। ওয়াশিংটনে রিপোর্ট দাখিল করতে উপস্থিত হয়েছি। একদিন Voice of Americaর পাকিস্তানীয় বাংলা প্রোগ্রামের ভারপ্রাপ্ত সিদ্দিকী সাহেবের বাড়ী নিমন্ত্রণ পেলাম। সেখানে আমাদের কলকাতা কেন্দ্রের স্বনামধন্য গল্পদাতা শ্রীযুক্ত জয়ন্ত চৌধুরীও এলেন। বর্তমানে তিনি ভারতের বাংলা প্রোগ্রামের ভার নিয়ে Voice of Americaয় আছেন। সিদ্দিকী সাহেব যেমন অমায়িক তেমনি অতিথিৎসল। ভূরিভোজনের আয়োজন ছিল। গল্প জমল ভালো। কথাপ্রসঙ্গে শ্রীযুক্ত চৌধুরী প্রশ্ন করলেন “আচ্ছা দেখলেন তো এদের শিক্ষাব্যবস্থা, এদের প্রাইভেট টিউটরের (private tutor) বালাই নেই, আর আমাদের প্রতিগৃহ গৃহশিক্ষক-ভারাক্রান্ত কেন?” প্রশ্ন সমীচিন। এ যাত্রা প্রথম এসে, নিউ ইয়র্কে ঘুরতে ঘুরতে একদিন ইণ্ডিয়ান ট্যারিস্ট অফিসে হাজির হয়েছিলাম। আমার আমেরিকা আসার কারণ শুনে ওখানেও এক ভদ্রলোক ঐ প্রশ্ন করেছিলেন। আজ ছ’ মাস পর্ববেষণমূলক ভ্রমণের পরে এর পূর্ণতর জবাব দিতে পারব মনে হয়।

আমরা গৃহশিক্ষক রাগি কেন? গৃহশিক্ষক আমাদের স্কুল কাইটাল পরীক্ষা সমুদ্র পার করবার সম্ভাব্য কাণ্ডারী। বিদ্যালয় জীবনে স্টেট পথস্থ তিন-চারটে বিষয়ে ফেল করা ছেলেমেয়েকেও তেমন তেমন গৃহশিক্ষক পার করিয়ে দেন দেখছি। তা’তে তাদের বিষয়জ্ঞানের কোন তারতম্য হয় বলে মনে করি না। কিন্তু পাস করে সামাজিক অমর্যাদার হাত থেকে রক্ষা পাওয়া এবং চাকুরির বাজারে ঢুকতে পারা—এই উদ্দেশ্য সিদ্ধ হয় এ তো মানতেই হবে।

আর গৃহশিক্ষক কাজে লাগেন আমাদের সেবা ছেলেমেয়েদের ভালো ফল করার জন্য। তাঁরা অতিশয় দক্ষ এবং অভিজ্ঞ, নামকরা বিদ্যালয়ের নামকরা শিক্ষক। যদি বিদ্যালয়ে ছাত্রের ভার কিছু কম থাকত এবং তাঁরা উদ্বেগহীন হয়ে মনপ্রাণ দিয়ে তাঁদের কতব্য করতে পারতেন তা’হলে বিদ্যালয়েই প্রয়োজনমত শিক্ষা দিতে পারতেন। কিন্তু তা’তেই যে গৃহশিক্ষকের চাহিদা একেবারে মিটে যেত এমন মনে হয় না। স্কুল কাইটাল পরীক্ষা ভালোভাবে পাশ করার তাগিদে ছাত্রেরা বলত, “ক্লাসে স্মার যা বললেন তা’ বললেন—তাঁকে বাড়ীতে আমার জন্য যদি আলাদা করে রাখা হয় তা’হলে আর একটু বেশী কিছু আমাকে বিশেষ করে বলবেন”—এ এক কারণ। তা’ ছাড়া ‘অমুক স্কুলের অমুক মাষ্টার মশায় ইংরাজী পড়ান ভালো তাঁকে পেতে পারে অত স্কুলের ছেলেরাও গৃহশিক্ষকরূপে। অনেকক্ষেত্রে এই সব ছাত্রছাত্রীর পরীক্ষার ফলে যে জৌলুস হয় তা’ নিতান্ত ক্ষণস্থায়ী। পরবর্তী পরীক্ষায় এবং কর্মজীবনে তাদের এ ঘসামাজ্য উজ্জ্বলতা থাকে না তবু তখনকার মত সামাজিক মর্যাদা, জলপানির টাকা, ভালো কলেজে অনার্সাসে ভর্তি, এতে মানসিক তৃপ্তি এবং লাভ আছে বৈকি!

আর এক দল আছে—যারা সাধারণ, তারাই দলে ভারী। বিদ্যালয়ের উপযুক্ত শিক্ষাদানের ব্যবস্থা থাকলে তারা গৃহশিক্ষকের সাহায্য ছাড়া স্কুল কাইটাল পরীক্ষা পাস করতে সমর্থ এবং উপরি সাহায্যে তাদের ভিতর থেকে জ্যোতি ঠিকরে বেরুবে না, হয়ত বড় জোর ডিভিশনের এদিক ওদিক হতে পারে। কিন্তু আমাদের অতি ভারাক্রান্ত অনেক ক্ষেত্রে অন্তঃপন্থিত শিক্ষকের কাছে তারা যথাযোগ্য সাহায্য পায় না। আর মুষ্টিমেয় যে কয়েকটা স্কুলে লেখাপড়া অপেক্ষাকৃত ভালো দেখানকার ছাত্রছাত্রীরা গৃহশিক্ষক রাখে মনোবলের অভাবে। ‘চারিদিকে সকলেরই বড়ীতে বিশেষ সাহায্যের ব্যবস্থা’—আমার নেই—তা’হলে আমার কি হবে! —আর যদি ডিভিশনটা তুলে নেওয়া যায় এক ধাপ, তা’হলেও লাভ—ভালো কলেজে ভর্তি হতে পারব।

স্কুল ফাইনাল পরীক্ষায় প্রস্তুতির কারণে এবং তার অন্তরকরণে আমাদের শ্রেণীর পরীক্ষার কড়াকড়িটা নিতান্ত মন্দ নয়। তা' ছাড়া ধরুন কোন ছাত্র দীর্ঘদিন অস্থিততার জগ্ন বিতালয়ে উপস্থিত হতে পারল না। অথচ তার একটা বছর নষ্ট হবে! তার অস্থিততার ক্ষতির উপযুক্ত গৃহশিক্ষক পূরণ করে দিতে পারেন। যদি পিতামাতার যোগ্যতার কিংবা সময়ের অভাব থাকে তা' হলে এ ছাড়া আর গতাস্তর কি?

উপরের কারণগুলিকে বলতে হয় তবু কিছুটা সঙ্গত এবং প্রয়োজনীয়তা আছে বলে গৃহশিক্ষকের চাহিদা এবং বিকল্পে কোটিং ক্লাস হু হু করে বেড়ে চলেছে। উচ্চতর শ্রেণীর গৃহশিক্ষক রাখার দৃষ্টান্ত বোধ হয় আরও কি কারণে জানি না আমাদের একদল অভিভাবকের অদৃষ্ট গৃহশিক্ষক অভিমুখী মনোভাব গঠিত হয়ে গিয়েছে। তাঁরা মনে করেন ছেলেমেয়েদের গৃহশিক্ষক অবশ্যই চাই—যেমন চাই তাদের আহাৰ, নিদ্রা। শিক্ষাজীবনের শুরু থেকে একজন গৃহশিক্ষক অচ্ছেদ্যবন্ধনে তার সঙ্গে জড়িয়ে যান, শুধু যোগ্যতার পরিবর্তনের প্রয়োজনে ব্যক্তির পরিবর্তন হতে থাকে মধ্যে মধ্যে। চাকুরীজীবনে গৃহশিক্ষক অনুসরণ করেন এও দেখেছি—অফিসের প্রয়োজনে লেখা “রিপোর্ট টিপোর্ট” সংশোধন করে দেন। আমার পেশার খাতিরে এই নেশা—সকলকে প্রশ্ন করি “কেন রেগেছেন প্রাইভেট টিউটর?” কেউ কেউ সত্যি বিশ্বাস করেন গৃহশিক্ষক ছাড়া পড়াশুনা সম্ভব নয়, তা সেই গৃহশিক্ষকের যেমন বিতাই থাকুক না কেন? ফেল করে করে অষ্টম শ্রেণী পর্যন্ত পড়েছে এবং চতুর্থ শ্রেণীর বিতাইও যাদের পেটে অনেক অন্তসন্ধানও মিলবে না এমন শিক্ষকও তাঁরা রাখেন। তাঁদের ধারণা যে ‘অ আ ক খ’ শিখেছে সেই তা' শেখাতে পারে, যে ‘প্রথম ভাগ দ্বিতীয় ভাগ পড়েছে সেই তা' পড়বার যোগ্য।’ চতুর্থ বার ম্যাট্রিক ফেল করা মাষ্টারকে অষ্টম শ্রেণীর ছেলের ভার দিয়ে অভিভাবককে স্বস্তির নিঃশ্বাস ফেলতে দেখেছি—“যা হোক একজন পৌজ মাষ্টার পাওয়া গেল।”

গৃহশিক্ষক আর একশ্রেণীর অভিভাবক নিযুক্ত করেন তাঁরা নিজেরা শিক্ষিত এবং মানতে বাধ্য হন ঐ রকম শিক্ষকের দ্বারা শিক্ষা দেওয়া সম্ভব নয়। তাঁদের কারণ হল—“ছেলেটাকে একটু পড়তে বসান অভ্যাস করাতে হবে তো—তাট।” এ প্রয়োজনীয় অভ্যাস তাঁরা কেন করাতে পারেন না, বললে, নানা রকম অজুহাত সমর্যাপন, বাড়ীর লোকের কাছে বাগ মানে না ইত্যাদি। আমি একজন অতি বুদ্ধিমতি উচ্চশিক্ষিতা মাকে তাঁর চার বছরের মেয়ের জগ্ন গৃহশিক্ষক কেন রেগেছেন জিজ্ঞাসা করায় জবাব পেয়েছিলাম—“আমার মেয়ে একটু বেশী বুদ্ধিমতী কিনা—তাঁই আমার কাছে বসতে চায় না। এ সব হ'ল নিছক অজ্ঞতা এবং দায়িত্ব এড়ান মনোভাব। এর ফলে শুধুমাত্র একদল লোক উপরুত হচ্ছে—তাঁরা আমাদের দুঃস্থ বিপদস্থ, নিম্নমধ্যশ্রেণী। এ রকম কয়েকটি পরিবারের কথা জানি, যাদের তৃতীয় চতুর্থ শ্রেণী পর্যন্ত পড়া ছেলেমেয়েরা গৃহশিক্ষকতা করে মাসে ১৫-৩০ উপার্জন করছে। এ টাকায় তাঁদের উপকার হয়। গৃহশিক্ষক রাখার এই পাগলামি না থাকলে এঁদের উপার্জনের কি উপায় হত আমি ভেবে পাই না। কিন্তু তাঁদের হাতে পড়া আমাদের জাতির ভবিষ্যতের কথা একবার ভাবুন তো?

সকলেই যে অল্পশিক্ষিত গৃহশিক্ষক রাখেন, ঠেকাজোড়া দেবার জগ্ন তা' নয়। ধারা বিত্তবান তাঁরা ভালো ভালো শিক্ষকও রেখে থাকেন। কিন্তু শিশু বয়সে এ রকম সাহায্যের যে প্রয়োজন হয় না উপরন্তু শিশুকে দায়িত্ববোধহীন করে তোলে তা' তাঁরা বোঝেন না। নামকরা ভালো স্কুলের ছাত্রের জগ্ন সেই স্কুলের অভিজ্ঞ অভিজ্ঞ শিক্ষককে গৃহশিক্ষক রাখতে দেগেছি শিশুকাল থেকে। কিন্তু তার জগ্নে ভবিষ্যতে সে কিছুই উল্লেখযোগ্য ফল করতে পারেনি। ঐ বিশেষ সাহায্য ছাড়াই সে মোটামুটি ভালো ফল করতে পারত কিন্তু অভিভাবকের মন মানে না।

তা' হলে আমাদের গৃহশিক্ষক রাখার প্রথম এবং প্রধান হেতু হল বিতালয়ে উপযুক্ত শিক্ষাদানের অভাব এবং গৃহে তার পরিপূরণের চেষ্টা। দ্বিতীয় আমাদের কড়া পরীক্ষাপ্রণালী এবং আমাদের জীবনে পরীক্ষার অস্তিত্ব—অর্থাৎ পরীক্ষা পাসের উপর এবং পাসের রকমের উপর আমাদের সামাজিক প্রতিষ্ঠা, ভবিষ্যৎ জীবিকা তথা জীবনের সম্পূর্ণ নির্ভরশীলতা—এ জগ্ন ছাত্রছাত্রীর এবং অভিভাবকেরও মনে বিভীষিকার সৃষ্টি ও মনোবলের হানি এবং তারপরে হ'ল অভিভাবকের অজ্ঞতা।

এখন আমেরিকার শিক্ষাক্ষেত্রে কি রকম হয় দেখা যাক। প্রথমে গুটিকতক প্রয়োজনীয় কথা জানা দরকার। ওদের একটি সহরের (আমেরিকায় গ্রাম নেই—ছোট অথবা বড় সহর) আলো, জলসরবরাহ, আবর্জনা পরিকার, শিক্ষা ইত্যাদির দায়িত্ব থাকে সহরবাসীর দ্বারা নির্বাচিত টাউন গভর্নমেন্ট এবং তার বিভিন্ন কমিটি বা বোর্ডের উপরে। ব্যয়নির্বাহ হয় সম্পত্তিকর বাবদ লব্ধ অর্থে। শিক্ষার ভারপ্রাপ্ত হ'ল স্কুল বোর্ড। বোর্ড সমগ্র ভাবে সহরের শিক্ষার প্রয়োজন চিন্তা করে' প্রতি বৎসর শিক্ষার পরিকল্পনা এবং ব্যয় নিয়ন্ত্রণ করেন। তাঁরা সমগ্র সহরের শিক্ষাপরিচালনা এবং পরিদর্শন করবার জন্ত একজন স্কুলসুপারিন্টেন্ডেন্ট নিযুক্ত করেন। তিনি শিক্ষাবিদ, পদাধিকারে বোর্ডের সভ্য এবং প্রধান পরামর্শদাতা। সু-শিক্ষার বন্দোবস্ত করা টাউন গভর্নমেন্টের সর্বপ্রথম এবং প্রধান কর্তব্য বলে স্বীকৃত। যদি শিক্ষায় কোন পরিকল্পনা অধিকাংশ সহরবাসীর অনুমোদন লাভ করে; তার জন্ত ব্যয় প্রয়োজন হলে করের হার বৃদ্ধি করেও সংগ্রহ করার ক্ষমতা টাউন গভর্নমেন্টের আছে; সুতরাং কোন সহরের শিক্ষার অগ্রগতি বা অবনতির মূলে থাকে সেই সহরবাসীর শিক্ষা, কর্মক্ষমতা এবং সম্পদ। রাজ্য সরকার বা কেন্দ্রীয় সরকারের সাহায্যের পরোয়া এরা বড় করেন না। কোন কোন অঞ্চলে তো এতই বিরূপ যে প্রাণপণে তা' প্রতিরোধ করবার চেষ্টা করে। আবার কোথাও কোথাও উক্ত সরকারি সাহায্য কিছু কিছু নেওয়া হয়। যদি সহরবাসী বোঝেন যে, শ্রেণীতে ছাত্রসংখ্যা কম এবং উপযুক্ত শিক্ষক হলে পড়াশুনা ভালো হবে তাঁরা এ ব্যবহার জন্ত অর্থ বরাদ্দ করবেন। আমেরিকায় সাধারণতঃ শ্রেণীতে ২৫ জন ছাত্রছাত্রী থাকে। শ্রেণী যাতে কোন সময় শিক্ষকশূন্য না থাকে সেদিকে সতর্ক দৃষ্টি রাখা হয়। কোন শিক্ষকের সাময়িক অল্পপস্থিতে (এক দিনেরও) দৈনিক হারে বিকল্প শিক্ষক নিযুক্ত করা হয়। এরকম বিকল্প শিক্ষক শিক্ষিকার একটি তালিকা বিদ্যালয়ে থাকে। এবং বিশেষ বিশেষ বিষয়, যথা বিজ্ঞান, সঙ্গীত ছাড়া সাধারণতঃ বিকল্প শিক্ষক পেতে অসুবিধা হয় না। এই প্রসঙ্গে মনে করিয়ে দিতে হয় যে বহুদিন থেকেই ওদেশে শিক্ষা বাধ্যতামূলক ও অবৈতনিক। সুতরাং জনসাধারণের শিক্ষার মান বেশ উঁচু। অতএব গৃহকর্মে রত গৃহিণীদের মধ্যে এরকম শিক্ষিকা পাওয়া অসম্ভব হয় না। বছরের মধ্যে শিক্ষকদের স্কুল বদল বা পেশা বদল প্রায় অজ্ঞাত।

আর একটা সত্য ওখানে স্বীকৃত হয়েছে। আবশ্যিক শিক্ষায় দেশের প্রত্যেকটি ছেলেমেয়ে যখন শিক্ষার আওতায় আসে তখন সত্যটি স্পষ্টতর হয়ে ওঠে। যথা—সব ছেলেমেয়ের মানসিক ক্ষমতা সমান নয়। তাঁরা সকলে সমান কঠিন মানের সব বিষয় পড়তে পারে না। এই জন্ত ওদের পাঠ্যক্রম নমনীয়, নানা বিষয় পড়ান হয়। ৫০০।৬০০ ছাত্রছাত্রী পড়ে এমন বড় বড় বিদ্যালয়ে ৮০।৮২টি বিষয়ও পড়ান হয়, উচ্চতর গণিত, উচ্চতর বিজ্ঞান, বিদেশী ভাষা থেকে টাইপরাইটিং, রান্নাবান্না, মোটর ড্রাইভিং ইত্যাদি। এর মধ্যে অবশ্যপাঠ্য সব রাষ্ট্রে একমাত্র ইংরাজী (কোন কোন বিদ্যালয় তার সঙ্গে আমেরিকার ইতিহাসও যুক্ত করে) তা'ও আবার সকলকে এক দরের ইংরাজি পড়তে বাধ্য করা হয় না। সাধারণতঃ বিদ্যালয়ে চার রকমের ইংরাজি পড়াতে দেখেছি।

ছাত্রছাত্রীর বুদ্ধি, প্রবণতা এবং আগ্রহ বুঝে তাদের বিষয়নির্বাচন করতে সাহায্য করা হয়। বলা বাহুল্য এসব বোঝবার এবং পরিমাপ করবার বিশদ ব্যবস্থা আছে। পরীক্ষাও হয় বিভিন্ন মানের। সুতরাং শ্রেণী থেকে শ্রেণীতে উত্তীর্ণ না হবার সম্ভাবনা থাকে খুব কম। যদি কেউ অসুস্থতা বশতঃ দীর্ঘদিন বিদ্যালয়ে উপস্থিত হতে না পারে, শিক্ষিকা তার বাড়ী গিয়ে তার' পড়াশুনার সাহায্য করেন। অল্প পিছিয়ে পড়া ছেলেমেয়েদের একটু বিশেষ সাহায্যের জন্ত শিক্ষকশিক্ষিকারা বিদ্যালয়ের সময়ের পর কিছুক্ষণ থেকে তাদের দেখিয়ে শুনিয়ে দেন। যদি বুদ্ধিসম্পন্ন ছাত্রছাত্রী কোন কারণে এত বেশী পিছিয়ে পড়ে যে শ্রেণীর আর সকলের সঙ্গে তাল রাখা তার অসাধ্য হয়, তা' হলে তা'কে কিছুদিনের জন্ত একটা বিশেষ শ্রেণীতে দেওয়া হয়। খুব বেশী ছাত্রের বিদ্যালয় হলে সেই স্কুলেই এই বিশেষ শ্রেণী এবং এরকম পিছিয়ে পড়া ছেলেমেয়েদের শিক্ষাদানে শিক্ষিত ও অভিজ্ঞ শিক্ষিকা থাকেন। না হলে সেই সহরের সব বিদ্যালয় মিলিয়ে এক বা একাধিক ঐ রকম বিশেষ শ্রেণী, কোন একটি বিদ্যালয়ের সঙ্গে যুক্ত থাকে এবং ঐ সব ছাত্রছাত্রীদের কিছুদিনের জন্ত সেখানে স্থানান্তরিত করা হয়।

প্রবন্ধপাঠ পরিকল্পনা—১৯৬৩-৬৪

ভারতীয় শিক্ষামন্ত্রালয়ের মাধ্যমিক শিক্ষা প্রসার-প্রকল্পবিভাগ ও বিভিন্ন রাজ্যের শিক্ষা বিভাগের পারস্পরিক সহযোগিতায় শিক্ষাবিদদের জ্ঞাত প্রবন্ধপাঠ ও প্রচারের একটি পরিকল্পনা গৃহীত হয়েছে।

উদ্দেশ্য :—

- ১। শিক্ষার সমস্যাসমূহের ওপর নূতন আলোকপাত ও তাদের সমাধানের জ্ঞাত শিক্ষাসেবিদের জ্ঞান ও অভিজ্ঞতার ভাণ্ডারের ব্যবহার।
- ২। এঁদের বিশিষ্টতম অতিক্রম্যসমূহের কথা সমগ্র শিক্ষাসমাজে বিদিত করা।
- ৩। শিক্ষাসমাজে জ্ঞান ও অভিজ্ঞতার আদান-প্রদান দ্বারা নূতন নূতন চিন্তার দ্বার উদ্ঘাটিত করা।

অংশগ্রহণকারী :—

- ১। মাধ্যমিক বিদ্যালয়ের শিক্ষকশিক্ষিকা।
 - ২। মাধ্যমিক শিক্ষাসম্পৃক্ত আধিকারিক।
 - ৩। শিক্ষণ-শিক্ষা-মহাবিদ্যালয়ের ও বিশ্ববিদ্যালয়ী শিক্ষণশিক্ষা-বিভাগের অধ্যাপক।
 - ৪। শিক্ষণ বিষয়ের ছাত্রছাত্রী ও গবেষক,
- এঁরা এই বিজ্ঞপ্তির শেবের তালিকার যে-কোনো একটি বিষয়ে প্রবন্ধ লিখবেন।

নিয়মাবলী :—

- ১। প্রবন্ধ বাংলা বা ইংরেজীতে লেখা যাবে।
- ২। বাংলা প্রবন্ধ সর্বভারতীয় পাঠসভার জ্ঞাত মনোনীত হ'লে লেখক তার ইংরেজী অনুবাদ করে' দেবেন।
- ৩। প্রবন্ধের দৈর্ঘ্য ২০০০।২৫০০০ শব্দের মধ্যে হবে।
- ৪। প্রবন্ধলেখক তাঁর গৃহীত বিষয়ে নিজ অভিজ্ঞতা, রূত পরীক্ষা, গবেষণা বা পাঠ অবলম্বনে লিপিবেন এবং ইচ্ছানুযায়ী দার্শনিক, ঐতিহাসিক বা কার্যকর দিক থেকে বিষয়ের উপস্থাপন করবেন।

ক্রম :—

আগামী ৩১শে অক্টোবরের মধ্যে প্রবন্ধের দুই কপি ২০বি জেজেস্ কোর্ট রোড, কলিকাতা-২৭ এই ঠিকানায় মহিলা শিক্ষণ মহাবিদ্যালয়ের প্রসার বিভাগে পাঠাতে হবে।

প্রতি রাজ্য থেকে মনোনীত প্রবন্ধগুলি সর্বভারতীয় ক্ষেত্রে বিচার করে তার মধ্যে শ্রেষ্ঠগুলিকে প্রকাশিত ও ব্যাপকভাবে প্রচারিত করা হবে এবং লেখকদের ৫০০/- পুরস্কার দেওয়া হবে। এছাড়া যথেষ্টসংখ্যক প্রবন্ধ পাওয়া গেলে বিভাগীয় পুরস্কারও দেওয়া হবে।

১৯৬৩-৬৪ সালের অন্য প্রবন্ধের বিষয় :—

- ১। মাধ্যমিক বিদ্যালয়ের শিক্ষকতা ও শিক্ষার উৎকর্ষ সাধন—যে কোন বিদ্যালয়পাঠ্য বিষয়বলম্বনে।
- ২। বিদ্যালয়ে প্রতিরক্ষাব্যবস্থার পরিকল্পনা।
- ৩। ছাত্রদের ব্যক্তিগত বৈশিষ্ট্যের স্বব্যবস্থাপনা।

- ৪। বিদ্যালয়ের পাঠ্যক্রমে ভাষা।
- ৫। ছাত্রদের জ্ঞান বাঞ্ছনীয় মূল্যবোধ।
- ৬। বিজ্ঞান শিক্ষার প্রয়োজন ও উপকারিতা।
- ৭। ছাত্রদের সম্পর্কে তথ্যসংরক্ষণ।
- ৮। কার্যক্ষেত্রে বহুশাখা বিদ্যালয়।
- ৯। বিদ্যালয় ও সমাজসেবা।
- ১০। শিক্ষক ও মাতাপিতার পারস্পরিক সহযোগিতা।
- ১১। বিদ্যালয়ের দৈনিক কার্যসূচীর পুনর্গঠন।
- ১২। মেয়েদের জ্ঞান পুথক শিক্ষাব্যবস্থার প্রয়োজনীয়তা বিচার।
- ১৩। অংকের মূল ধারণার শিক্ষণ।
- ১৪। বিজ্ঞানের মূল ধারণার শিক্ষণ।

(নবম পৃষ্ঠার পর)

আর যারা স্বল্পবুদ্ধি, যাঁরা সাধাবণের সঙ্গে এক দরের পড়াশুনা কোনদিন করতে পারবে না তাদের জ্ঞানও বিশেষ শিক্ষাপ্রাপ্ত শিক্ষিকার দায়িত্বে বিশেষ শ্রেণী থাকে সমগ্র সহরের স্বল্পবুদ্ধি ছেলেমেয়ের জ্ঞান। বলা বাহুল্য এ সব ব্যবস্থাই সহরবাসীর অন্তিমোদিত করলর অর্থে রুত। স্বতরাং অভিভাবককে এর জ্ঞান অতিরিক্ত ব্যয় বহন করতে হয় না।

বিদ্যালয়জীবনের শেষে এসে আমেরিকার ছাত্রছাত্রীকে আমাদের স্কুলফাইনাল পরীক্ষার মত কোন পরীক্ষার সম্মুখীন হতে হয় না। নিজের নিজের স্কুলের পরীক্ষায় উত্তীর্ণ হলে স্কুল থেকেই তারা সার্টিফিকেট পায়। তাও একটা পরীক্ষায় তাদের বিচার হয় না। শেষের তিন বছর ধরে' অসংখ্য পরীক্ষায় তারা নিজেদের যোগ্যতা প্রমাণ করবার সুযোগ পায়। পরীক্ষা পাসের কোন বিভাগ নেই। পরীক্ষায় প্রথম দ্বিতীয় স্থানের ভিত্তিতে পুরস্কার দেবার প্রথাও নেই। প্রশ্ন উঠতে পারে এতে তাদের প্রতিযোগিতামূলক উন্নতির অবকাশ রইল কোথায়? এর উত্তরে আর একটি প্রবন্ধ হয় সেজন্য তার থেকে নিবৃত্ত হলাম এখন। তবে ভিন্ন ভিন্ন বিষয় পড়ে, বিভিন্ন মানের পরীক্ষা দিয়ে ছেলেমেয়েরা সকলেই পাশ করে সার্টিফিকেট পেলে, কলেজে ভর্তি এবং চাকুরির ক্ষেত্রে কি করে তাদের পার্থক্য নিরূপিত হয়? এর উত্তরে বলি সার্টিফিকেটে ছাত্র কি দরের কোন কোন বিষয় পড়েছে এবং কি কি নম্বর পেয়েছে সব খোলাখুলি লেখা থাকে। তা' থেকে চাকুরির মালিক প্রার্থীদের দর বঝতে পারেন। কলেজে ভর্তির জ্ঞান সাধারণতঃ এর উপরে একটা সংক্ষিপ্ত কলেজ প্রবেশিকা পরীক্ষা দিতে হয়। সে পরীক্ষার প্রশ্নপত্র এমন ভাবে রচিত যে কোটিং এ পরীক্ষার্থীর কোন উপকার হয় না।

স্বতরাং আমেরিকার শিক্ষাক্ষেত্রে এই অবস্থা দাঁড়াল। শ্রেণীর পড়াশুনা ভালো হবার ব্যবস্থা করা হয়েছে। দীর্ঘ অল্পহতা বণতঃ ক্ষতির সম্ভাবনা রোধ করা হয়েছে সাময়িকভাবে পিছিয়ে পড়া এবং স্বল্পবুদ্ধি ছেলেমেয়েদের জ্ঞান বিশেষ সাহায্যের ব্যবস্থা রয়েছে, স্কুল ফাইনাল পরীক্ষার বিভীষিকা নেই, যেন তেন প্রকারেণ ভালো নম্বর পাবার জ্ঞান প্রাপ্যপাত করার প্রয়োজনও অনেকেই বোধ করে না। এর জ্ঞান অবস্থা দেশের অর্থনৈতিক স্বচ্ছলতা ও সামাজিক মূল্যবোধ দায়ী। পরীক্ষার ফলের জ্বোলুনের উপর সামাজিক মর্যাদা সামান্যই নির্ভর করে আর স্বচ্ছন্দে জীবন যাপন করা এমন কি বাড়ী-গাড়ী করার মত অর্থোপার্জনের সুযোগ যেমন তেমন ভাবে পাশ করলে—পাশ না করলেও মেলে। বলতে গেলে স্বচ্ছন্দ জীবনযাপন অত সহজলভা হওয়ায় অনেক সময় কিশোর-কিশোরীরা উচ্চাকাঙ্ক্ষারহিত হয়—এটাই বরঞ্চ সমস্যা—কারণ তা'তে জ্ঞাতির ক্ষতি। ওদের পরীক্ষা পদ্ধতিতে ভালো নম্বর পেতে কোটিং বিশেষ কিছুই সাহায্য করতে পারে না। যাদের উচ্চাকাঙ্ক্ষা আছে তারা খেটে খুটে নিজেরাই পড়ে। এই কারণে গৃহশিক্ষক রাখার প্রয়োজন নেই, পদ্ধতিও নেই। উপরের দিকে নেই বলে নীচের দিকে একথা কেউ ভাবতেও পারে না।

(এই প্রবন্ধের লেখিকা শ্রীমতী শান্তি বানার্জি সাধাওয়াং বালিকা বিদ্যালয়ের প্রধানা শিক্ষিকা এবং সম্প্রতি বৃত্তিগ্রাহী হয়ে আমেরিকার যুক্তরাষ্ট্রে শিক্ষাব্যবস্থার পর্যবেক্ষণমূলক ভ্রমণ করে এসেছেন।)

॥ মূল্যায়ন ॥

(১৯৬৩ খ্রিষ্টাব্দে জাতীয় মাসে অনুষ্ঠিত মহিলা শিক্ষণশিক্ষা-মহাবিদ্যালয়ের শিক্ষণপ্তাহসম্পর্কে এই থেকে ১১ই জাতীয় পর্বন্ত মাধ্যমিক বিদ্যালয়ে মূল্যায়ন সম্বন্ধীয় যে আলোচনাচক্র অনুষ্ঠিত হয় তার বিভিন্ন বিষয়ের বিবৃতি অবলম্বনে নিচের বিষয়বস্তু প্রকাশিত হ'ল।)

সমাজবিদ্যা।

শ্রীমুকুনার নিতের পরিচালনায় সমাজবিদ্যার আলোচনাচক্র অনুষ্ঠিত হয়।

ভূমিকা :—পৃথিবীর অত্যাধিক দেশে প্রচলিত থাকলেও ভারতীয় মহাবিদ্যালয়সমূহে সমাজবিদ্যা নতুন সন্নিবিষ্ট হয়েছে। গৃহমুখী ভারতবাসী নিজের ঘরে বসে সমাজচেতনার শিক্ষা লাভ করতে বলেই বোধ হয় বিদ্যালয়গুলি এতদিন এই দায় তুলে নেয়নি। বর্তমানে সামাজিক ও অর্থনৈতিক পরিণতির মধ্যে দিয়ে যে জাতিগত পরিবর্তন এসেছে তার অনিবার্য সমস্যাগুলির সমাধানের জন্য সমাজবিদ্যার প্রয়োজনবোধ হয়েছে। যদিও মানুষকে প্রকৃত মানুষরূপে গড়ে তোলার সমস্ত শিক্ষারই নিগূঢ় উদ্দেশ্য তবু সংকটকালে তাড়াতাড়ি উপায় খুঁজবার প্রয়োজনে এই বিষয়টিকে সহায়রূপে গ্রহণ করা হয়েছে।

নোতুন বিষয় দিয়ে কোনো নোতুন উদ্দেশ্য সাধিত করতে হ'লে তার পাঠনপদ্ধতিও নোতুন করতে হবে। বর্তমানে দেশের সবচেয়ে বড় সমস্যা হ'ল যে ছাত্রসমাজ ক্রমান্বয়ে অস্বচ্ছন্দ ও দুর্বলস্বভাব হয়ে যাচ্ছে বলে' জাতির পরিণতির পথে বাধা সৃষ্টি হচ্ছে।

এই নোতুন বিষয় দশ ও একাদশশ্রেণীর বিদ্যালয়ে যথাক্রমে ঐচ্ছিক ও বাধ্যতামূলক বিষয়রূপে গৃহীত হয়েছে। একাদশ শ্রেণীর বিদ্যালয়ে এর আন্তঃপরীক্ষা নিতে হয় আর দশশ্রেণীর বিদ্যালয়ে ১৯৬৫ সাল থেকে বহিঃপরীক্ষা গৃহীত হবে।

জীবন ও পরীক্ষা এই দুয়ের প্রয়োজন মেটাতে হ'লে শিক্ষকদের দুটি বিষয়ের প্রতি লক্ষ্য রাখতে হবে। প্রথমত, ছাত্রদের মননশীলতার বৃদ্ধি ও চিন্তাশক্তির উদ্বোধন করতে হবে। এর উপযোগী অনুসন্ধান ও বিশ্লেষণমূলক কার্যকলাপের পর মূল্যায়নের জন্য প্রবন্ধমূলক আলোচনার পরিমাণ কনিয়ে দিয়ে বুদ্ধিপ্রধান আলোচনার ওপর ঝুঁকি রাখতে হবে। দ্বিতীয়ত, সংবাদপত্রের কোনো খবর, কোনো বইয়ের কোনো অংশ বা প্রচলিত কোনো মতামত তুলে দিয়ে বিভিন্ন দৃষ্টিকোণ থেকে বিচার করতে বলতে হবে, নয়তো বিশ্লেষণমূলক বিষয়মুখী প্রশ্ন করতে হবে। দ্বিতীয়ত যতদিন না বহিঃপরীক্ষার সংস্কার সাধিত হচ্ছে ততদিন তার প্রয়োজনের সংগেও ছাত্রদের পরিচিত করিয়ে দিতে হবে।

আমরা সাধারণত যে-ভাবে পরীক্ষা করে' থাকি, সেগুলিকে বিবৃতি ও তথ্যমূলক বলে' বর্ণনা করা যায়, যেমন,—“জলবায়ুর বর্ণনা কর”—, “রাজ্যশাসনপ্রণালীর কথা লেখ”—“পতনের কারণ লেখ”—ইত্যাদি। এর উত্তর দেওয়ার জন্য মুখস্থবিদ্যাই যথেষ্ট। পরিবর্তে এমন প্রশ্ন করতে হবে যাতে ছাত্রদের চিন্তা করতে হবে। যেমন, ডাঃ দ্বিপাঠীর “মুঘলসাম্রাজ্যের উত্থানপতন” এই বই থেকে একটি উদ্ধৃতি দিয়ে দেওয়া হ'ল যে রাণাপ্রতাপ আকবরের নিকট বশুতা স্বীকার না করে' ভারতের একা নষ্ট করেছিলেন,—প্রশ্ন হবে—“এই মতের তুমি কি সমর্থন কর? তোমার মতের কারণ দাও।”

পরীক্ষায় এরকম ধরনের প্রশ্ন এলে স্বভাবতই বিদ্যালয়ের পড়ানোর পদ্ধতি পরিবর্তিত হবে। শিক্ষককে নিজ বিষয়ে অনেক বেশি দক্ষ হতে হবে, নতুবা পরীক্ষার হলে হৈ হৈ চিংকার ভিন্ন সংস্কারের আর কোনো ফল দর্শাবে না।

শিক্ষকের পরিশ্রম অবশ্য বেড়ে যাবে। তাঁকে বিভিন্ন বিষয় ও ধারণার নূতন নূতন সম্ভাব্য বোগস্বত্রে চিন্তা করতে এবং ছাত্রদের পরীক্ষায় তার প্রয়োগ করতে হবে। নূতন করণীয় কাজের মধ্যে আরো থাকবে—নিজে পরিশ্রম করে' চাট, মাপ প্রভৃতি করা বা ছাত্রদের দিয়ে করানো, ছাত্রদের স্বয়ংক্রিয়তায় উৎসাহ দেওয়া, পরীক্ষামূলক পরিকল্পনা গ্রহণ করে' তার থেকে সাধারণস্বত্রে আবিষ্কার করা, ছাত্রদের বুদ্ধি, চিন্তা, মননশীলতা ও নানাবিধ দক্ষতার শিক্ষা দিয়ে সামগ্রিক উন্নতির সহায়তা ও মূল্যায়ন করা ইত্যাদি।

পরন্তু নূতন পদ্ধতিতে শিক্ষা দিয়ে প্রতিটি ছাত্রের মধ্যে যে পরিবার, সমাজ, দেশ ও বিশ্বের চেতনা জাগ্রত করা হবে পরীক্ষার প্রশ্নের মধ্য দিয়ে সেই সমস্তের মূল্যায়ন হওয়া চাই।

কয়েকটি প্রশ্নের নমুনা :—

ক। প্রবন্ধমূলক।

- ১। প্রাচীন থেকে আধুনিক কাল পর্যন্ত ইতিহাসে দেখা যায় যে, নদনদীর তীরে তীরে নগর ও গ্রামের পত্তন হয়েছে। এর কয়েকটি সম্ভাব্য কারণ দেখিয়ে ছোট একটি প্রবন্ধ রচনা কর।
- ২। “ভারতের ইতিহাসে বিদ্যাপর্বতের যথেষ্ট গুরুত্ব আছে”—ইতিহাসিক ঘটনাবলীর উল্লেখ করে' এই উক্তি প্রমাণ বা অপ্রমাণ কর।
- ৩। জৈনধর্মের তুলনায় বৌদ্ধধর্ম অধিক বাস্তব ও উদার হওয়া সত্ত্বেও ভারতে বৌদ্ধদের তুলনায় জৈনদের সংখ্যা বেশি কেন?
- ৪। জব চার্লস স্মিথের গ্রামটিকে ব্যবসায়ের উপযোগী হবে বলে' বিবেচনা করে' এখানে এসে বসতি স্থাপন করেন। তার ভবিষ্যৎবাণী কতখানি সফল হয়েছে বিচার কর।
- ৫। বর্তমানকালে মানুষের সভ্যতা ও সংস্কৃতি রক্ষা করতে হ'লে নাগরিকদের কেবল নিজেদের রাষ্ট্রের প্রতি আনুগত্য স্বীকার করলেই চলবে না, আন্তর্জাতিক প্রতিষ্ঠানের প্রতি আনুগত্য প্রদর্শন করাও তাদের কর্তব্য। এই পরিস্থিতিতে যুদ্ধনিবারণের ক্ষেত্রে যু-এন-ও-র মূল্য কতখানি অনুভূত হয়েছে সংক্ষেপে আলোচনা কর।
- ৬। পঞ্চশীল বলতে কি বোঝায়? কাদের মধ্যে এই চুক্তি হয়? বর্তমানে এর কোনো ব্যতিক্রম দেখেছ কি?
- ৭। “বিনাটিকিটে ভ্রমণের জন্য রেলওয়ে পুলিশ এক ব্যক্তিকে গ্রেপ্তার করায় কয়েকজন ছাত্র তাকে ছাত্র বলে' দাবী করে' পুলিশের ওপর হামলা করে। উত্তেজিত জনতা ছাত্রদের সমর্থনের জন্য বাসট্রাম পোড়ানো প্রভৃতি জাতীয় স্বার্থবিরোধী কার্যকলাপে লিপ্ত হয়; কিন্তু অনুসন্ধান জানা যায় যে ধৃতব্যক্তি ছাত্র নয়।—” এই ঘটনাটি ছাত্রসমাজের আচরণের ওপর কিরূপ আলোকপাত করে?
- ৮। আজকাল প্রায় শোনা যায় যে স্কুলকলেজগুলি প্রচুর শিক্ষিত বেকার সৃষ্টি করেছে। বেকারসমস্যা যে কি নিদারুণ তা সকলেই অবগত আছেন। সুতরাং শিক্ষার অধিক প্রসার আমাদের সমাজের পক্ষে ক্ষতিকর।—এই উক্তির যথার্থ্য সম্বন্ধে তোমার মত কারণসহ সংক্ষেপে লেখ।
- ৯। কোনো বিদ্যালয়ের বহুসংখ্যক ছাত্র নির্বাচনী পরীক্ষায় উত্তীর্ণ না হওয়ায় তারা প্রধান শিক্ষক মহাশয়কে কিছুক্ষণের জন্য ঘরে আটক করে। ফলে তিনি দ্বিতীয়বারের বিবেচনায় অনুত্তীর্ণদের অনেকেই উত্তীর্ণ

করে' দেন। প্রধানশিক্ষক ও ছাত্রদের এ কাজের সম্বন্ধে তোমার মতামত সংক্ষেপে কারণসহ ব্যক্ত কর।

- ১০। মুদালিয়র কমিটির মতে ছাত্রদের রাজনৈতিক আন্দোলন ও ধর্মঘট থেকে বিরত থাকা উচিত,—এ-সম্বন্ধে তোমার মতামত সংক্ষেপে, কারণসহ বিবৃত কর।

খ। বিষয়মুখী—নির্বাচনী।

নিচের প্রত্যেক প্রশ্নের কতকগুলি করে' উত্তর দেওয়া হয়েছে, প্রতি ক্ষেত্রেই সে উত্তরটি ঠিক তার পাশের ✓ চিহ্ন দাও :—

- ১। প্রশ্ন :— ভারতীয় উপনিবেশ বলতে কোন দেশ বোঝায় ?
উত্তর :—মালয় (), সিরিয়া (), কান্দোডিয়া (), আসাম (), ইরাক (), বোর্নিও (),
মিশর (), সুমাত্রা (), জাভা (), ঘানা (), বলিদ্বীপ ()।
- ২। প্রশ্ন :— ফা-হিয়ান কোন যুগে ভারতে আসেন ?
উত্তর :—বৃটিশ (), গুপ্ত (), মৌর্য (), মোগল ()।
- ৩। প্রশ্ন :— ভারতের প্রথম গভর্ণর জেনারেল কে ?
উত্তর :—ক্লাইভ (), হেস্টিংস (), কর্ণওয়ালিশ (), কার্জন ()।
- ৪। প্রশ্ন :— সিপাহীবিদ্রোহ কোন খৃষ্টাব্দে ঘটেছিল ?
উত্তর :—১৮৫৩ (), ১৭৭০ (), ১৮৫৭ (), ১৯৪০ ()।
- ৫। প্রশ্ন :—
“বণিকের মানদণ্ড পোহালে শর্বরী
দেখা দিল রাজদণ্ডরূপে”—একথা কাদের সম্বন্ধে বলা হয়েছে ?
উত্তর :—ইংরেজ (), ওলন্দাজ (), ফরাসী (), পর্তুগীজ ()।
- ৬। প্রশ্ন :— রাষ্ট্র বলতে বোঝায়—নির্দিষ্ট ভূমিখণ্ড, সরকার ও সার্বভৌম, এই অনুসারে নিচের কোনটি রাষ্ট্র ?
উত্তর :—পশ্চিমবঙ্গ (), ভারত (), দিল্লী ()।
- ৭। প্রশ্ন :— পশ্চিমবঙ্গে কবে থেকে দশমিক মুদ্রা প্রচলিত হয় ?
উত্তর :—১৯৫৩ (), ১৯৬১ (), ১৮৫৭ (), ১৯৪৭ (), ১৯৫৭ ()।

গ। বিষয়মুখী—সাজানো।

নিচের ঘটনা বা ব্যক্তির নামের পাশের বন্ধনীতে কালানুক্রমিকভাবে আগে থেকে পরে ১, ২, ৩, ৪..... ইত্যাদি সংখ্যা বসানো।

- ১। সমুদ্রগুপ্ত (), অশোক (), হর্ষবর্ধন (), কনিক (), দ্বিতীয় চন্দ্রগুপ্ত (), মৌর্যচন্দ্রগুপ্ত ()।
- ২। সিপাহীবিদ্রোহ (), কলিংগযুদ্ধ (), হলদিঘাটের যুদ্ধ (), খালুয়ার যুদ্ধ (), পাণিপথের যুদ্ধ ()।

ঘ। বিষয়মুখী—তালিকা।

- ১। মুঘলযুগের ভারত সম্বন্ধে মূল্যবান ও সঠিক তথ্য যাদের বিবরণ থেকে জানা যায় সেরূপ তিনজন বিদেশীর নাম লেখ

- ২। রাষ্ট্রসংঘের অধীনস্থ ছয়টি সংস্থার নাম লেখ—

গ। বিষয়মুখী—ঠিক ভুল।

নিচের প্রত্যেকটি প্রশ্ন বা উক্তির পাশে কতকগুলি করে' কারণ মন্তব্য বা উত্তর দেওয়া হয়েছে প্রত্যেক ক্ষেত্রেই যেটি বা যেগুলি ঠিক তার পাশের ✓ ও যেটি বা যেগুলি ভুল তার পাশের বন্ধনীতে × চিহ্ন বসানো।

- ১। “অশোক কেবল ভারতের ইতিহাসে নয় পৃথিবীর ইতিহাসে এক অদ্বিতীয় স্থান অধিকার করে আছেন, কারণ—
 —তিনি বৌদ্ধধর্মাবলম্বী ছিলেন। ()
 —তিনি প্রজাবংশল সম্রাট ছিলেন। ()
 —তিনি “বিহারযাত্রার” বিলাস ত্যাগ করে' ধর্মযাত্রা করেছিলেন। ()
 —তিনি কলিংগ বিজয় করেছিলেন। ()
 —তিনি ভাইদের হত্যা করে' সিংহাসনে আরোহণ করেছিলেন। ()
- ২। “হর্ষবর্ধন বৌদ্ধধর্মের পৃষ্ঠপোষক ছিলেন কিন্তু তাঁর সময়ে বৌদ্ধধর্মের অবনতি ঘটে”— কারণ—
 —তিনি বৌদ্ধধর্ম প্রচারের কোনো ব্যবস্থা করেননি। ()
 —তাঁর সময়ে ব্রাহ্মণ্যধর্মের প্রাধান্য দেখা গেছিল। ()
 —তিনি ধর্মসংক্রান্ত ব্যাপারে অত্যন্ত গোঁড়া ছিলেন। ()
 —তিনি বৌদ্ধধর্মে অনুরক্ত ছিলেন। ()
- ৩। “আলবেরুনি হিন্দুদের সাহিত্য শাস্ত্র ও দর্শনের ভূয়সী প্রশংসা করেছেন, কিন্তু তিনি হিন্দুদের সংকীর্ণতার সমালোচনা করেন”— কারণ—
 —হিন্দুরা বিদেশিদের স্বেচ্ছ বলতেন। ()
 —মুসলমান আক্রমণের ফলে হিন্দুদের মধ্যে অশিক্ষা-কুশিক্ষার প্রাবল্য ঘটেছিল। ()
 —আলবেরুনি হিন্দুধর্মকে পছন্দ করতেন না। ()
 —হিন্দুরা বিদেশে যেতেন না এবং বিদেশিদের সংগে মিশিতেন না। ()
- ৪। “আওরংজীব ভ্রাতাদের হত্যা করে' সিংহাসনে আরোহণ করেন, পিতাকে বন্দী করেন, আত্মীয়স্বজন ও সম্ভাব্য প্রতিদ্বন্দ্বীদের অপসারিত করেন, হিন্দু কর্মচারীদের পদচ্যুত করেন, প্রকাশে হিন্দুধর্মচরণ নিষিদ্ধ করেন, উৎসবানুষ্ঠানগুলি বন্ধ করেন, কিন্তু তা সত্ত্বেও তিনি নিষ্ঠাবান ও ধর্মপ্রাণ মুসলমানরূপে খ্যাত”, কারণ—
 —অন্যধর্মকে আঘাত করা ইসলামধর্মের আদর্শ। ()
 —আওরংজীব রাজ্যলোভী ছিলেন। ()
 —তাঁর রাজত্বকালে কয়েকজন হিন্দুরাজা স্বেচ্ছায় ইসলামধর্ম গ্রহণ করেন। ()
 —তাঁর অনুদার নীতির ফলে পরবর্তিকালে রাজপুত ও মরাঠারা বিদ্রোহ করে। ()
 —ইসলামধর্মামুসারে উৎসবানুষ্ঠানাদি নিষিদ্ধ হওয়াই উচিত। ()
 —আওরংজীব ইসলামধর্মকে রক্ষা করার জন্ত ভ্রাতৃহত্যা করেন। ()
- ৫। “পৃথিবীবিখ্যাত অজন্তাগুহার চিত্রগুলির সংস্কার করতে গিয়ে আধুনিক রসায়নবিদেরা বহু মূল্যবান চিত্র নষ্ট করে' ফেলেছে”— কারণ—
 —চিত্রগুলি রুচিবিগহিত ছিল। ()
 —এই জায়গায় আরো সুন্দর কারুকার্য করা হবে। ()
 —সরকারি কর্মচারীগণ কর্তব্যপরায়ণ নয়। ()
 —রাসায়নিক সন্মার্জক দ্রব্যগুলি ভালভাবে পরীক্ষিত ছিল না। ()
- ৬। বাংলাদেশের শিল্পপ্রসারের পথের প্রধান বাধা হ'ল—
 —শ্রমিকের অভাব। ()
 —বিদ্যুতের অভাব। ()
 —শিল্পপ্রসারের স্থানের অভাব। ()
 —এখানে কৃষিকাজ শিল্পের চেয়ে লাভজনক। ()

- বাঙালীরা কৃষিকাজে বেশি নিপুণ। ()
- বাঙালীরা শ্রমবিমুখ। ()
- ৭। “কৃষিপ্রধান দেশ ভারতে খাদ্যশস্য ঘাটতি পড়ার কারণ কি? ফসল ধারাপ হ'লে দোষারোপ করা হয়ে থাকে প্রাকৃতিক বিপর্যয় অর্থাৎ অতিবৃষ্টি, অনাবৃষ্টি, বহা প্রভৃতির ওপর, কিন্তু এর আসল কারণ অগ্ররূপ—
- চাষীদের কৃষি সম্বন্ধে অনভিজ্ঞতা। ()
- কৃষিতে বৈজ্ঞানিক পদ্ধতির অভাব। ()
- এদেশের কৃষকেরা অলস ও আরামপ্রিয়। ()
- শিক্ষা পেলে কৃষকেরা কৃষিকে জীবিকারূপে গ্রহণ করতে লজ্জা পায়। ()
- কৃষক ও জমির মালিকেরা নিজেদের জমিতে ইচ্ছামতো ফসল ফলায়। ()
- কৃষি বিষয়ে সরকার ও চাষীদের মধ্যে সহযোগিতা নেই। ()
- বাংলার জনসংখ্যা ক্রমেই বাড়ছে। ()
- ৮। ইংলণ্ডে একজন শ্রমিক বছরে প্রায় ৩০০ টন কয়লা তুলতে পারে, কিন্তু বাংলাদেশের শ্রমিক গড়ে বছরে ২০০ টন কয়লা তোলে, এরূপ হওয়ার কারণ—
- ইংরেজ শ্রমিকের অবস্থা স্বচ্ছল। ()
- বিহারী শ্রমিকেরা কৃষিকারের সময়ে গ্রামে চলে যায়। ()
- ইংলণ্ডের শ্রমিকেরা বেশি বলিষ্ঠ। ()
- বাঙালি শ্রমিকেরা ইংলণ্ডের শ্রমিকদের মতো দক্ষ নয়। ()
- ইংলণ্ড বৈজ্ঞানিক প্রণয় অধিক উন্নত। ()
- ৯। ল্যাংকাশায়ারের একজন শ্রমিক ভারতের তিনজন শ্রমিকের মতো কাজ করতে পারে, কারণ—
- ভারত গ্রীষ্মপ্রধান দেশ বলে' এখানকার শ্রমিকেরা শ্রমবিমুখ। ()
- ভারতীয় শ্রমিকেরা কারিগরি শিক্ষা পায় না। ()
- এদেশের শ্রমিকেরা বেশি আনন্দপ্রমোদের স্বযোগ পায় বলে' খাটতে চায় না। ()
- এদেশের শ্রমিকদের জীবনযাত্রার মান উন্নত নয়। ()
- এদেশে মালিক ও শ্রমিকের মধ্যে প্রীতির অভাব। ()
- ১০। ১৯৬২ খৃষ্টাব্দের ১৯শে সেপ্টেম্বর সংবাদপত্রে প্রকাশিত একটি প্রবন্ধ থেকে জানা যায় যে ১৯৪০ খৃষ্টাব্দের ফেব্রুয়ারী মাসে রেলওয়ে বোর্ড কাঁচড়াপাড়ার নিকটে ইঞ্জিন নির্মাণের কারখানা স্থাপিত করার সিদ্ধান্ত গ্রহণ করেন এবং কিছু কাজও আরম্ভ হয়। আবার ১৯৪৭ খৃষ্টাব্দের অক্টোবর মাসের সিদ্ধান্তে পূর্বনির্ধারিত স্থানের পরিবর্তনের দ্বারা মিহিঝামের কাছে তার স্থান নির্দিষ্ট হয়, কারণ কাঁচড়াপাড়ায়—
- যানবাহনের অসুবিধা। ()
- কাঁচামালের অসুবিধা। ()
- শ্রমিকের অভাব। ()
- কাঁচড়াপাড়া ভারত পাকিস্তানের নিকট অবস্থিত। ()
- ১১। চীনের ভারত আক্রমণের মতো জাতীয় সংকটে ছাত্রছাত্রীর কর্তব্য—
- স্কুলকলেজে ধর্মঘট করা। ()
- ছাত্রদের অধ্যয়নই শ্রেষ্ঠ তপস্যা, সুতরাং রাজনৈতিক ব্যাপারে মন না দিয়ে পড়াশুনা করা। ()
- বিদ্যালয় ও গৃহে চীনের ভীত নিন্দা করা। ()
- সামর্থ্যাভ্যাসী প্রতিরক্ষা তহবিলে দান করা। ()
- চীন-ভারত কলহ সম্বন্ধীয় তথ্য সংগ্রহের দ্বারা এই বিষয়ে অবহিত হওয়া। ()

চ। বিষয়মুখী—বিচারমূলক।

নিচে প্রত্যেকটি প্রশ্ন, উক্তি বা বিবৃতির পাশে কতকগুলি করে উত্তর, মন্তব্য বা কারণ দেওয়া হয়েছে; প্রত্যেক ক্ষেত্রেই সেগুলির বিচার করে পাশের বন্ধনীতে নিম্নলিখিত চিহ্ন বসানো—সত্য=“স”, মিথ্যা=“ম”, সম্ভবত

১। “কৃষিবিজ্ঞান প্রথম আবিষ্কারক মেয়েরা”— কারণ—

- পুরুষেরা শিকার ও যুদ্ধবিগ্রহে ব্যস্ত থাকতো। ()
- নোতুন কিছু আবিষ্কারের ক্ষমতা পুরুষদের চেয়ে মেয়েদের বেশি। ()
- মেয়েরা বেশি কর্মঠ ও কৌতুহলী। ()
- মেয়েদের সংসারী হওয়ার ইচ্ছা বেশি। ()

২। সিক্কুসভ্যতার বিলুপ্তির কারণ—

- বহু ও অত্যন্ত প্রাকৃতিক দুর্ভোগ। ()
- বৈদিক আর্ষদের আগমন ও আক্রমণ। ()
- পরবর্তী সভ্যতার সংগে সামঞ্জস্যের অভাব। ()
- শ্রেণীগত বৈষম্য ও বিরোধ। ()

৩। পশ্চিমবঙ্গের মতো ক্ষুদ্র রাজ্যে চারটি বড় বড় শিল্পাঞ্চল থাকা সত্ত্বেও মেগুলি রাজ্যের ধনবৃদ্ধি বা অধিবাসীদের কর্মের সংস্থান করতে পারছে না, কারণ—

- জাতীয় মূলধনের অভাব। ()
- দেশের ক্রটিপূর্ণ শিক্ষাব্যবস্থা। ()
- জ্যামিতিক হারে জনসংখ্যার বৃদ্ধি। ()
- দেশবাসীর অলসতা ও আরামপ্রিয়তা। ()
- দেশবাসীর উद्यোগের অভাব। ()
- ধনীদের মূলধন নিয়োগের দায়িত্ব গ্রহণে অনিচ্ছা। ()
- দেশের লোকের কলহপ্রিয়তা। ()

৪। ১৯৬২ সালের অক্টোবর মাসে চীনারা হঠাৎ ভারত আক্রমণের পর নভেম্বর মাসে আবার হঠাৎ যুদ্ধবিরতি ঘোষণা করে এবং পশ্চাদপসরণের সময়ে ভারতকে কতগুলি অপহৃত অস্ত্রশস্ত্র ফেরৎ দিয়া যায় কেন?

- প্রচার কার্যের উদ্দেশ্যে। ()
- অস্ত্রগুলি ব্যবহারের অযোগ্য বলে। ()
- চীনারা ভারতীয় অস্ত্র ব্যবহার করতে জানে না বলে। ()
- তার। উদারনৈতিক হয়ে পড়েছিল বলে। ()

৫। ভারত সরকারের স্বর্ণনিয়ন্ত্রণবিধি প্রবর্তিত হওয়ার ফলে—

- সরকার লুকোনো সোনা বের করে’ আনতে পারবেন। ()
- চোরাই সোনার আয়দানি কমবে। ()
- সোনার গহনার কদর কমবে। ()
- সোনার দোকানের কর্মচারীরা বেকার হয়ে পড়বে। ()
- নারীর সৌন্দর্যচর্চা অসম্পূর্ণ থাকবে। ()

৬। আজকালকার ছাত্রছাত্রীরা সিনেমা দেখে গোল্লায় যাচ্ছে। গুরুজনদের চোখরাঙানি সত্ত্বেও তারা সিনেমা দেখে এবং বহুক্ষেত্রে এইজন্য তারা পড়াশুনায় অত্যন্ত অবহেলা করে থাকে, এক্ষেত্রে কি করা উচিত?

- সিনেমা ঘরগুলি বন্ধ করে দেওয়া উচিত। ()
- সিনেমায় যাতে ক্রটিপূর্ণ চিত্র দেখানো হয় তার ব্যবস্থা করা উচিত। ()
- স্কুলের মধ্যে খেলাধুলা ইত্যাদির ব্যবস্থা করে’ বিভ্রালয়কে চিন্তাকর্ষক করা উচিত। ()
- সিনেমার সব চিত্রই বখাৰ্ণ আনন্দবিধানে সমর্থ বলে’ তা দেখতে উৎসাহ দেওয়াই উচিত। ()

ভূগোল।

শ্রীমতী ইন্দিরা দাসের নেতৃত্বে এই আলোচনাচক্র অহুষ্ঠিত হয় এবং ২৪ জন শিক্ষিকা তাতে অংশ গ্রহণ করেন।

ভূমিকা :—

ভূগোল শিক্ষার উদ্দেশ্য এবং ফলশ্রুতির নির্ণয়ের জন্য এই চক্রে নৈর্ব্যক্তিক সমীক্ষার আলোচনা হয়। প্রথমে ভূগোলপাঠের সাধারণ উদ্দেশ্যসমূহ সংক্ষেপে নিম্নলিখিতভাবে নির্ধারিত করা হয় :—

- (ক) ছাত্রছাত্রীদের চিন্তা ও কল্পনাশক্তিকে উজ্জীবিত করা।
- (খ) তাদের ভবিষ্যৎ জীবনের কর্মপন্থা নির্ণয়ে সাহায্য করা।
- (গ) স্থানাগরিকতা, দেশপ্রেম, আন্তর্জাতিকতার ভাব প্রভৃতি চারিত্রিক গুণাবলীর বিবর্তনে সাহায্য করা।
- (ঘ) অবসর বিনোদনের উপাদান বৃদ্ধি করা।

এই সব সাধারণ উদ্দেশ্যের প্রাপ্তির জন্য মাধ্যমিক বিদ্যালয়ের ছাত্রছাত্রীদের বয়স ও পরিণতিভেদে প্রধানত দুইটি স্তরে ভাগ করে প্রত্যেক স্তরের বৈশিষ্ট্যের ও প্রয়োজনের বিশ্লেষণ করা হয়।

ষষ্ঠ থেকে অষ্টম শ্রেণি মাধ্যমিক বিদ্যালয়ের প্রথম স্তর বলে গণ্য। এই পর্যায়ের প্রথমে ছাত্রছাত্রীদের বয়স সাধারণত ১১ বলে ধরা যায়। এই সময়ে বুদ্ধি বিকশিত হতে আরম্ভ করে, কৌতুহলও বৃদ্ধি পায়। এশিয়া মহাদেশের জ্ঞানের মাধ্যমে ছাত্রছাত্রীরা নিজেদের দেশের সম্পর্কে সম্যক জ্ঞান লাভ করতে পারে। এই মহাদেশের জলবায়ু ও ভূপ্রকৃতির বিভিন্নতা মানবজীবনকে কি প্রকারে প্রভাবিত করে সে সম্পর্কে ধারণা এরা করতে পারে। দৈনন্দিন জীবনে তারা আবহাওয়াগত পার্থক্য লক্ষ্য করে বলে' তার কারণসম্মানক্রমে দিব্যাত্মির হ্রাসবৃদ্ধি ও ঋতুপরিবর্তনের বিষয়ে শিক্ষা দেওয়া যায়। নিজ মহাদেশ সম্বন্ধে জ্ঞানলাভ করার পর সপ্তম ও অষ্টম শ্রেণিতে অন্যান্য মহাদেশের সংগে এশিয়ার কি সম্পর্ক, সাদৃশ্য, বৈসাদৃশ্য ইত্যাদির জ্ঞানলাভ করবার জন্য যুরোপ, আফ্রিকা, আমেরিকা ও অস্ট্রেলিয়ার বিষয়ে শিক্ষা দেওয়া যায়। এইভাবে বিভিন্ন ভূপ্রকৃতির গঠন, জলবায়ুর প্রভাব, মানুষের জীবনযাত্রা প্রণালীকে কিভাবে প্রভাবিত করে সে বিষয়ে তারা জ্ঞানলাভ করতে পারে।

দ্বিতীয় স্তরের স্বত্বপাত হয় নবম শ্রেণিতে। এই সময়ে ছাত্রছাত্রীদের বয়ঃসন্ধির যুগ। এদের দৃষ্টিভঙ্গির পরিবর্তন হয়, এরা কিছুটা বাস্তবধর্মী হয়ে ওঠে। স্থানাগরিকতা ও জাতীয়তাবোধের ভিত্তিতে আন্তর্জাতিকতা-বোধের সৃষ্টি করার জন্য এই সময়ে বিভিন্ন মহাদেশের মধ্যে তুলনামূলক আলোচনা করতে শিক্ষা দেওয়া যায়। এই আলোচনায় তারা বিভিন্ন দেশের সামাজিক, অর্থনৈতিক ও রাজনৈতিক সমস্যাগুলির কথা জানতে পারে এবং এই জ্ঞানের ব্যবহারে ভবিষ্যৎ জীবনের নাগরিক কর্তব্যের বহু শ্রমের মীমাংসা করার নৈপুণ্যের সৃষ্টি করা যায়। এই জ্ঞানের ফলে তারা পৃথিবীর দেশসমূহের পারস্পরিক নির্ভরশীলতা লক্ষ্য করতে পারে এবং পৃথিবীর জনসমাজের এক্যবোধ তাদের মধ্যে জাগ্রত হয়।

প্রশ্নাবলি

ষষ্ঠ শ্রেণি

ভারতবর্ষ, এশিয়া ও যুরোপ

ক। যথার্থ উত্তর নির্ণয় (নির্বাচনী)

বান্দিকের স্তম্ভে কতকগুলি প্রশ্ন বা উক্তি দেওয়া হয়েছে, ডানদিকে সেই সম্বন্ধে কতকগুলি করে' উত্তর বা মন্তব্য করা হয়েছে, প্রত্যেক ক্ষেত্রেই যেটি সত্য তার পাশের বন্ধনীতে চিহ্ন দাও।

- ১। দিল্লী ভারতবর্ষের—নদী (), বন্দর (), রাজধানী ()।
- ২। বঙ্গদেশের প্রধান উৎপন্ন দ্রব্য—পাট (), আখ (), গম (), যব (),
- ৩। থর রাজপুতানার—সমভূমি (), মরুভূমি (), বনভূমি ()।
- ৪। কলিকাতার পাশে প্রবাহিত নদী—হুগলী (), গংগা (), ভাগীরথী ()।

- ৫। হিমালয়ের উচ্চতম চূড়া—কাকনজংঘা (), ত্রিশূল (), এভারেষ্ট।
- ৬। পামীর একটি—দেশ (), মালভূমি (), পর্বত শৃংখ ()।
- ৭। এভারেষ্ট একটি—দেশ (), মালভূমি (), পর্বত শৃংখ ()।
- ৮। বৈকাল একটি—বদ্বীপ (), নদী (), হ্রদ (), পর্বত ()।
- ৯। স্বমেক মহাসাগর এশিয়ার—উত্তরে (), দক্ষিণে (), পূর্বে (), পশ্চিমে ()।
- ১০। স্বয়েজ একটি—নদী (), খাল (), সাগর (), মহাসাগর ()।
- ১১। এশিয়ার অধিকাংশ অঞ্চল নিরক্ষরেখার—উত্তরে (), দক্ষিণে ()।
- ১২। এশিয়ার অধিকাংশ অঞ্চল কৃষিপ্রধান কারণ—ভূমি উর্বর ()।
—গ্রীষ্মকালে প্রচুর বৃষ্টিপাত হয় ()।
—শিল্পোন্নতির অসুবিধা ()।
- ১৩। এশিয়ার দক্ষিণ পূর্ব অঞ্চলগুলি মৌসুমী জলবায়ুর দেশ, কারণ—
—এই অঞ্চলের ওপর দিয়ে মৌসুমী বায়ু প্রবাহিত হয় (),
—এই অঞ্চলে গ্রীষ্মকালে প্রচুর বৃষ্টিপাত হয় (),
—এখানে শীতকালে শীতের প্রকোপ অত্যন্ত বেশি হয় (),
- ১৪। টেমস নদীর তীরের শহরের নাম—এডিনবরা (), লিভারপুল (), ডাবলিন (), লন্ডন ()।
- ১৫। টেমস নদীর তীরের লন্ডন ইংলণ্ডে নাম—রাজধানী () গ্রাম () কয়লাখনি ()।
- ১৬। ব্রিটিশ দ্বীপপুঞ্জের দীর্ঘতম নদী—স্থানন (), আয়ার (), ক্লাইড (), টেমস ()।
- ১৭। আয়ারল্যান্ডের প্রধান নগর—লিভারপুল (), লন্ডন (), ডাবলিন ()।
- ১৮। ফ্রান্স ও ইটালির প্রধান শিল্পজাত দ্রব্য—এরোপ্লেন (), লৌহজাত দ্রব্য (), রেলইঞ্জিন (), মদ ()
- ১৯। ফ্রান্সের রাজধানী—রোম (), ব্রসেল্‌স (), প্যারিস ()।
- ২০। „ চিনি পরিষ্কার করার কেন্দ্র—আজাকসও (), ওবুসো (), লীল (), রীসজ ()।
- ২১। হল্যান্ড ও ডেনমার্কের প্রধান শিল্পজাত দ্রব্য—কাচের জিনিস (), মোটর গাড়ি (), দুগ্ধজাত দ্রব্য (),
- ২২। সুইজারল্যান্ডের „ „ —কাগজ (), () ঘড়ি (), দেশলাই ()।
- ২৩। ফ্রান্সের কি পৃথিবীতে সর্বোত্তম—গম () তামাক (), ড্রাক্স ()।
- ২৪। আল্পস যুরোপের একটি প্রধান—নদী (), পর্বত (), শহর ()।
- ২৫। ইটালির মধ্যের আল্পসের প্রধান শৃংগের নাম—ডিনারিক () কার্পেথিয়ান। (), আল্পস (),
- ২৬। পৃথিবীর আন্তর্জাতিক বিচারালয় যেখানে আছে—রটারডাম () দি হেগ (), আমসটারডাম (),
- ২৭। দুই পর্বতের মধ্যবর্তী সমভূমির নাম—নিম্নভূমি (), উপত্যকা (),—গিরিপথ ()।
- ২৮। চারিদিক স্থলদ্বারা বেষ্টিত স্বাভাবিক জলভাগের নাম—উপত্যকা (), উপসাগর ()—হ্রদ ()।
- ২৯। নদীর উৎস কাহাকে বলে?—নদী যেখানে সমুদ্র পড়ে (), নদীর উৎপত্তি (),
দুই নদীর মিলন স্থল ()।
- ৩০। পার্বত্য অংশে নদীর গতিকে কি বলে?—মধ্যগতি (), নিম্নগতি (), প্রাথমিক গতি ()।
- ৩১। নদীর শেষ গতিতে কোন কাজ বেশি হয়?—ক্ষয় (), বহন (), সঞ্চয় ()।
- ৩২। খোলা মাঠে বা সমুদ্রের তীরে ঝাড়াইয়াদূরে তাকাইলে —আয়তন (), ঝড় (),
মনে হয় আকাশ ও পৃথিবী এক দিগন্ত (), উত্তরাংশ ()।
সীমারেখায় মিশিয়াছে। তাহার নাম —

- ৩৩। প্রাথমিক শিলা কোনটি?—চূণাপাথর (), বেলপাথর (),
গ্রেট (), গ্র্যানাইট ()।
- ৩৪। কোয়ার্জাইট কোন শিলা থেকে উৎপন্ন হয়েছে? চূণাপাথর (), গ্র্যানাইট (),
—বাসাল্ট (), বেল পাথর ()।
- ৩৫। প্রাথমিক অবস্থায় পৃথিবী কিরূপ ছিল?—কঠিন (), তরল (), শীতল ()।

খ। শূন্যস্থান পূর্ণ করা (সম্পূরক)

নিচের প্রত্যেক বাক্যের শূন্যস্থানগুলি অথবা বাক্যের শেষের চিহ্নিত স্থানগুলি যথাযথ শব্দদ্বারা পূর্ণ কর :—

- ১। বোম্বাই ভারতের প্রধান—।
- ২। মাদ্রাজ ভারতের—কূলে অবস্থিত।
- ৩। কান্দলা ভারতের একটি—।
- ৪। গংগা হিমালয়ের—নামক স্থান হইতে উৎপন্ন হইয়া—এর নিকট সমভূমিতে নামিয়াছে।
- ৫। গংগা বাংলাদেশে প্রবেশ করিয়া —ও—এই দুই শাখায় বিভক্ত হইয়াছে।
- ৬। গংগা যেখানে বহুধারায় সাগরে পড়িয়াছে সেই অরণ্যময় অঞ্চলের নাম—।
- ৭। গংগা, ব্রহ্মপুত্র ও সিন্ধু—হইতে উৎপন্ন হইয়াছে।
- ৮। শতদ্রু, বিপাশা, ইরাবতী, চন্দ্রভাগা ও বিতস্তা যে প্রদেশ দিয়া বহিয়া গিয়াছে তাহার নাম—।
- ৯। উত্তর-পশ্চিম ভারতে দুই নদীর অন্তর্বর্তী অঞ্চলকে—বলে।
- ১০। দক্ষিণ ভারতের চারটি প্রধান নদীর নাম—, —, —, —।
- ১১। পুরী একটি স্বাস্থ্যকর—ও হিন্দুদের পবিত্র—।
- ১২। আগ্রার স্মৃতি-সৌধগুলির মধ্যে—পৃথিবীর এক আশ্চর্য।
- ১৩। ১২৪৭ সালের—ই আগষ্ট স্বাধীনতালাভের সংগে সংগে ভারতবর্ষ—ভাগে বিভক্ত হয়।
বৃহত্তর অংশের নাম—ও ক্ষুদ্রতর অংশের নাম—।
- ১৪। মৌর্যমৌ কথার অর্থ—।
- ১৫। এশিয়ার যে যে অঞ্চলে মৌর্যমৌ বায়ুর প্রভাব দেখা যায় লেখ— — — —।
- ১৬। নিচের দেশগুলি কোন মহাদেশে অবস্থিত?
স্কটল্যান্ড—, মালয়—, জার্মানি—, চীন—, ইংলণ্ড—, ইরাক—।
- ১৭। পৃথিবীর মধ্যে সবচেয়ে বড় সমভূমি—।
- ১৮। কৃষি ও পোল্যাণ্ডের বিখ্যাত উৎপন্ন দ্রব্য—তেল।
- ১৯। পোল্যাণ্ডের—এর খনি পৃথিবীতে বৃহত্তম।
- ২০। —হাংগেরি ও জার্মানির বিখ্যাত খনিজ দ্রব্য।
- ২১। ভূমধ্যসাগরীয় অঞ্চলের উৎপন্ন ফলের মধ্যে— — ও —প্রধান।
- ২২। যুরোপের সুন্দরী নগরীয় নাম —।
- ২৩। স্কটল্যান্ডের রাজধানী—।
- ২৪। গম উৎপাদন যুরোপে—প্রথম ও—দ্বিতীয়।
- ২৫। —নগর যুরোপের রেশমশিল্পের কেন্দ্র।
- ২৬। গ্রেট ব্রিটেনের জলবায়ু—।
- ২৭। গ্রেট ব্রিটেনের তিন অংশ —, — ও —।
- ২৮। স্কটল্যান্ডের রাজধানী—।

- ২৯। স্কটল্যান্ডের—পাটিশিল্লের জন্ম বিখ্যাত।
- ৩০। ল্যাংকাশায়ারে—শিল্পের প্রাধান্য বেশি।
- ৩১। গ্রিনিচ শহরের—বিখ্যাত।
- ৩২। হল্যান্ডের অপর নাম—।
- ৩৩। —ও—বেলজিয়ামের প্রধান খনিজদ্রব্য।
- ৩৪। ফ্রান্সের দক্ষিণে—পর্বতমালা ও দক্ষিণ পূর্বে—এর কয়েকটি শাখা।
- ৩৫। ফ্রান্সের উত্তরে—প্রণালি ও—দেশ।
- ৩৬। —চীনের দীর্ঘতম নদী।
- ৩৭। হোয়াংহো নদীর অপর নাম—।
- ৩৮। যুরেশিয়া বলিতে—ও মহাদেশ বোঝায়।
- ৩৯। যুরেশিয়ার মধ্যে—র নদীগুলি দীর্ঘতর।
- ৪০। যুরোপের প্রায় সমস্ত নদীই—
- ৪১। যুরোপের সমুদ্রতীর—হওয়ার ফলে বহু উৎকৃষ্ট বন্দর গড়ে উঠেছে।
- ৪২। গ্রানাইট, কোয়ার্টজ ও বাসাল্ট—এর নাম।
- ৪৩। বায়ুর প্রধান উপদান—ও—।
- ৪৪। জলীয় বাষ্প ঠাণ্ডায় জমে—এ পরিণত হয়।
- ৪৫। ভূপৃষ্ঠের থেকে যতই ওপরে ওঠা যায় তত ই বায়ু—ও—হয়।
- ৪৬। —এর সংস্পর্শে বায়ু গরম হয়।
- ৪৭। পৃথিবীর আকৃতি—।
- ৪৮। পৃথিবী হেলান-ভাবে সূর্যের চারি ধারে ঘোরে বলে সূর্যের আলো কখন—ও কখন—ভাবে পড়ে।
- ৪৯। দুই নদীর মিলনস্থলকে—বলে।
- ৫০। সমুদ্রে পড়ার সময়ে নদীর চওড়া মুখের নাম—।
- ৫১। নিম্নগতিতে নদীর কাজ—।

গ। রেখামানচিত্র (সম্পূরক।)

- ১। ভারতের রেখামানচিত্রে প্রধান প্রধান নদীগুলি একে দেখাও।
- ২। এশিয়ার " " উদ্ভিদ অঞ্চলগুলি " "।
- ৩। যুরেশিয়ার " " উত্তরসাগর পতিত নদীগুলি একে দেখাও।

ঘ। সত্যমিথ্যা (নির্বাচনী)

- ১। খনিজ তৈল এককালে প্রাণী এবং উদ্ভিদের দেহ থেকে নিঃসৃত হয়েছিল।
- ২। বায়ুমণ্ডলের ওপরের স্তরের উষ্ণতা বরফের উষ্ণতার চেয়ে কম।
- ৩। জলকণা আকারে বড় হয়ে নিচে পড়তে থাকলে তাকে তুষার বলে।
- ৪। শীতপ্রধান দেশে প্রায়ই শীতকালে বৃষ্টি হয়।
- ৫। বায়ুস্থ জলীয় বাষ্প ঠাণ্ডা জিনিষের সংস্পর্শে এসে শিশিরে পরিণত হয়।
- ৬। জলকণা বায়ুস্থ ধূলিকণার সাহায্যে বাতাসে ভেসে থাকলে তাকে কুয়াশা বলে।

ঙ। সাজিয়ে দেওয়া (নির্বাচনী)

প্রত্যেক প্রশ্নের বাঁ-দিকের স্তম্ভে কতকগুলি নাম বা উক্তি দেওয়া হয়েছে ডানদিকের স্তম্ভে তার সংগে সম্পর্কিত এলোমেলোভাবে দেওয়া হয়েছে। ডানদিকের শব্দগুলির নম্বর বাঁদিকের স্তম্ভের সেগুলির সংগে সম্পর্কিত উক্তি বা শব্দগুলির পাশের বন্ধনীতে যথাযথভাবে বসিয়ে দাও। প্রত্যেক ক্ষেত্রে ডানদিকের স্তম্ভে একটি অতিরিক্ত শব্দ দেওয়া হয়েছে।

১। বাঁ-দিকে শিল্পের ও ডানদিকে দেশের নাম :—

রেশম ()।

পাট ()।

ইস্পাত ()।

চিনি ()।

১। বাংলা।

২। উত্তরপ্রদেশ।

৩। বিহার।

৪। কাশ্মীর।

৫। মাদ্রাজ।

২। বাঁ-দিকে দেশের ও ডানদিকে কৃষিজাত উৎপন্নদ্রব্যের নাম :—

এশিয়ার ()।

এশিয়ার অপেক্ষাকৃত শুষ্ক অঞ্চলের ()।

মাকুরিয়ার ()।

১। সয়াবীন।

২। আখ।

৩। গম।

৪। ধান।

৩। বাঁ-দিকে দেশের ও ডানদিকে রাজধানীর নাম

ফ্রান্স ()।

বেলজিয়ম ()।

স্কটল্যান্ড ()।

১। এডিনবরা।

২। লন্ডন।

৩। প্যারিস।

৪। ক্রসল্‌স।

৪। বাঁ-দিকে নদীর নাম ও ডানদিকে উৎপত্তিস্থল :—

লেনা ()।

ইয়েনেসি ()।

জর্ডন ()।

১। সায়ন পর্বত।

২। লেবানন পর্বত।

৩। পামীর।

৫। বৈকাল হ্রদ।

৫। বাঁ-দিকে দেশের ও ডানদিকে অধিবাসীর নাম :—

ফ্রান্স ()।

হল্যান্ড ()।

ডেনমার্ক ()।

ইংলণ্ড ()।

১। ইংরেজ।

২। বেলজীয়।

৩। দিনেমার।

৩। ফরাসী।

৪। গুলন্দাজ।

৬। বাঁ-দিকে বর্ণনা, ও ডানদিকে নাম :—

যে ছোট নদী বড় নদীতে

মিলিত হয় ()।

যে ছোট নদী বড় নদী থেকে

বের হয় ()।

মোহনার চণ্ডা মুখ ()।

১। নিয় নদী

২। শাশা নদী।

৩। খাড়ি

৪। উপনদী।

৭। বা-দিকে প্রশ্ন ও ডানদিকে উত্তর :—

কমলার অভাবে ফ্রান্সকে শিল্পের জগত

কোন শক্তির ওপর নির্ভর করতে হয় ()।

কোন শহর রোম উপত্যকার মুখে অবস্থিত

কসিকার রাজধানীর নাম কি ?

১। আজকসিও।

২। পেট্রোল।

৩। বিদ্যুত।

৪। মারসেল্জ।

সপ্তমশ্রেণি।—অষ্ট্রেলিয়া, আফ্রিকা, দক্ষিণ আমেরিকা।

ক। ষথার্থ উত্তরনির্ণয়—নির্বাচনী।

বা-দিকের স্তম্ভে কতকগুলি প্রশ্ন বা উক্তি দেওয়া হয়েছে ডানদিকে সে সম্বন্ধে কতকগুলি করে উত্তর বা মন্তব্য করা হয়েছে, প্রত্যেক ক্ষেত্রেই যেটি সত্য তার পাশের বন্ধনীতে ✓ চিহ্ন দাও।

১। আটলাস আফ্রিকার —নদী (), পর্বত (), রাজধানী ()।

২। আবিসিনিয়া একটি—মালভূমি (), হ্রদ (), উপত্যকা ()।

৩। নিয়াসা আফ্রিকার—গিরিপথ (), নগর (), হ্রদ ()।

৪। আফ্রিকার উত্তরাংশের জলবায়ু—সমভাবাপন্ন (), চরম ভাবাপন্ন ()। —নাতিশীতোষ্ণ ()।

৫। আফ্রিকার উত্তর উপকূলের অধিবাসী—হেমিটিক (), হটেন্টট (), সেমিটিক (),—নিগ্রো ()।

৬। আফ্রিকার অধিবাসীদের মধ্যে সর্বাপেক্ষা ক্ষুদ্রকায়—পিগমি (), বুশম্যান (), হটেন্টট ()।

৭। কানাহারি মরুভূমিতে যারা বাস করে—পিগমি (), বুশম্যান (), ককেশীয় ()।

৮। আফ্রিকার উত্তরাংশে—মকরক্রান্তি (), বিষুবরেখা (), কর্কটক্রান্তি ()।

৯। আফ্রিকা পৃথিবীর যে মণ্ডলে—উষ্ণ (), নাতিশীতোষ্ণ () হিম ()।

১০। গিনি উপকূলের পাশ দিয়ে যে স্রোত প্রবাহিত—কেনারি (), শীতল (), উষ্ণ ()।

১১। আবিসিনিয়ায় উৎপন্ন হয়—কফি (), নারিকেল (), আলু ()।

১২। মারে ডার্লিং অববাহিকায় দেখা যায়—অরণ্য (), ভূগভূমি (), মরুভূমি ()।

১৩। অষ্ট্রেলিয়ার শ্রেষ্ঠ সম্পদ—মেষ (), সোনা () পেট্রোলিয়াম ()।

১৪। লায়ার একপ্রকার—পশু (), পাখি (), পতঙ্গ ()।

১৫। নিরক্ষরেখার উত্তরে যে মাস থেকে অক্টোবর পর্যন্ত—শীতকাল (), গ্রীষ্মকাল (), শরৎকাল ()।

- ১৬। ক্রান্তীয় অঞ্চলে জলবায়ু—সুদানীয় (), মরুপ্রদেশীয় (), ভূমধ্যসাগরীয় ()।
- ১৭। গ্রেট ডিভাইডিং রেঞ্জ অষ্ট্রেলিয়ার যে দিকে উত্তরে (), পূর্বে (), মধ্যে ()।
- ১৮। অষ্ট্রেলিয়ার মধ্য ভাগে—পর্বতশ্রেণি (), সমভূমি () মরুভূমি
- ১৯। গ্রেট ব্যারিয়ার রিফ—পর্বতমালা (), মালভূমি (), প্রবালপ্রাচীর (),
- ২০। দঃ আমেরিকার সর্বোত্তর বিন্দু যে অন্তরীপে—গ্যালিসস (), হর্ন (), ব্রাংকো ()।
- ২১। বলভিয়া মালভূমির উত্তরে যে শৃংগ একংকাগুয়া (), () সোরাটী (), চিম্বোরাভো ()।
- ২২। আমেজন নদীর অববাহিকার যে সমভূমি—ল্যামো (), পাম্পাস (), সেলভা ()।
- ২৩। বার ফলে পর্বতের সৃষ্টি—ভূমিকম্প (), সমুদ্রশ্রোত (), বিক্ষোৰণ ()।
- ২৪। জালামুখ কাকে বলে—পর্বতশৃংগ (), অগ্নেয়গিরি (), নদীর উৎস ()।
- ২৫। ভূপৃষ্ঠ হতে বহু উন্নত বিস্তৃত শিলাস্তূপকে বলে—পর্বত (), পাহাড় (), মালভূমি ()।
- ২৬। ভূমধ্য সাগরীয় জলবায়ুতে উৎপন্ন হয়—আপেল (), ইক্ষু (), তুলা ()।
- ২৭। সোনা পাওয়া যায়—পঃ অষ্ট্রেলিয়া (), দঃ আফ্রিকা (), টাসমানিয়া ()।
- ২৮। সাদানা অঞ্চলে পাওয়া যায়—কফি (), নারিকেল (), আনু ()।

খ। শূন্যস্থান পূরণ। স্মৃতিমূলক।

নিচের বাক্যসমূহের শূন্যস্থানগুলি যথাযথ শব্দ প্রয়োগে পূর্ণ কর :

- ১। আফ্রিকার পশ্চিমে—ভেনজুয়েলা শ্রোত প্রবাহিত।
- ২। আফ্রিকার বৃহত্তম নদী—
- ৩। —অঞ্চলে সারা বছর বৃষ্টি হয়।
- ৪। হেমিটিক জাতীয়েরা ধর্মে প্রধানত —।
- ৫। পিগমিরা—নদীর উপত্যকায় বাস করে।
- ৬। হট্টেট্টেরা ঘাঘাবর ও—পালন করে।
- ৭। মরু অঞ্চলের প্রধান পালিত পশু—
- ৮। আফ্রিকার অপেক্ষাকৃত নিবিড় অরণ্যে—ও—পাওয়া যায়।
- ৯। ফরাসীরা আফ্রিকার—অঞ্চলে বাস করে।
- ১০। কংগোর গতিপথে—ও—জলপ্রপাত বিখ্যাত।

মানচিত্র স্মৃতি ও কাজ

১। প্রদত্ত অষ্ট্রেলিয়ার রেখামানচিত্রে নিম্নলিখিত বিষয়গুলি নির্দিষ্ট কর :—যারে নদী ডার্লিং নদী, আয়ার হ্রদ, অষ্ট্রেলিয়ান আল্পস্, কার্পেটারিয়া উপসাগর

ঘ। উত্তর মেলানো—স্মৃতিনির্ভর

নিচের প্রত্যেক প্রশ্নের বা দিকের স্তম্ভে কতকগুলি বাক্যাংশ আর ডান দিকের স্তম্ভে তাদের বাকি অংশ এলোমেলো ভাবে দেওয়া আছে। তীরসম্বিত রেখার দ্বারা ডানদিকের অংশগুলিকে বা দিকে যথাযথ অংশের সংগে সংযুক্ত কর—

(প্রত্যেক ডানদিকের স্তম্ভে একটি বাড়তি অংশ আছে)

- | | |
|---|--|
| ১। আফ্রিক গতির ফলে—
বার্ষিক গতিয় ফলে—
ভূগর্ভে তরলপদার্থর আলোড়নের ফলে— | দিন বাড়ে কমে
ভূমিকম্প হয়
দিবরাত্র হয়
ভূমিকম্প হয় |
| ২। আফ্রিকার দীর্ঘতম নদী—
" " হ্রদ
পৃথিবীর বৃহত্তম মরুভূমি | মিসোরি
সাহারা
নীল
টাংগানিকা |
| ৩। দীর্ঘ আশযুক্ত মিহি তুলা হয়
আফ্রিকায় রবার পাওয়া যায় | নিরক্ষীয় অঞ্চলে
ভূমধ্যসাগরীয় অঞ্চলে
নীলনদের উপত্যকায় |
| ৪। চিলি
ভেঞ্জুয়েলা
ব্রাজিল
ইকোয়েডর | কীটো
শ্চাট্টিয়াগো
হাভানা
কারাকাস
রিও-ডি-জানিয়েরো |
| ৫। অষ্ট্রেলিয়ার মধ্য দিয়ে গেছে
" পূর্বদিকে আছে
যারে-ডার্লিং এর উপনদী | সারামবিজি
মকরক্রান্তি
ডিভাইডিং রেঞ্জ
ব্যারিয়ার রিফ |

অষ্টম শ্রেণি

ভূমিকা :—অষ্টম শ্রেণির পাঠ্য তালিকা হ'ল উত্তর আমেরিকায় রাজনৈতিক ও প্রাকৃতিক বিষয়ের বিস্তৃত জ্ঞানদান, যুরোপ মহাদেশের ফ্রান্স, জার্মানি ও রাশিয়ার বিস্তৃত বিবরণ এবং প্রাকৃতিক বিষয়ের অন্তর্গত শিলা, নদী ও তাহার কার্য, বায়ুপ্রবাহ ইত্যাদি বিষয়ের জ্ঞানদান।

উদ্দেশ্য : উপরি-উক্ত বিষয়ের জ্ঞানদানের জন্য নিম্নলিখিত উদ্দেশ্য গুলি ধরা হয়েছে

(ক) এই শ্রেণির ছাত্রছাত্রীদের বয়স সাধারণত ১২/১৫ বছর বলে ধরা যায়। এই সময়ে তাদের বুদ্ধি ও চিন্তাশক্তি কিছুটা বাস্তবধর্মী হয়ে ওঠে, গ্রহণ করবার ক্ষমতাও বৃদ্ধি পায়। তাই যে পৃথিবীর এক অংশে তারা বাস করছে তার সংগে এক অচ্ছেদ্য বন্ধনের ধারণাকে জাগ্রত করার জন্য অগ্রান্ত্র কয়েকটি দেশ ও মহাদেশের আঞ্চলিক ও রাজনৈতিক অবস্থা সম্বন্ধে জ্ঞানদানের চেষ্টা করা হয়। এই প্রসঙ্গে দেশগুলির পারস্পরিক নির্ভর শীলতার ধারণা দেওয়া যেতে পারে। নিজ দেশের সংগে উক্ত স্থান গুলির সাদৃশ্য, বৈসাদৃশ্য, সম্পর্ক ইত্যাদি বিষয়ের জ্ঞান তারা আহরণ করতে পারে।

(খ) দেশের জলবায়ু ও প্রাকৃতিক গঠন মানুষের জীবনকে কি ভাবে প্রভাবিত করে এই জ্ঞান ছাত্রছাত্রীরা তখনই সুন্দর করে আয়ত্ত করতে পারে যখন তারা বিভিন্ন জলবায়ু ও প্রাকৃতিক গঠনের প্রকৃতি সম্বন্ধে জ্ঞানলাভ করেছে। এবার আরো কতকগুলি অংশে জ্ঞানার্জনের ফলে একটি আন্তর্জাতিক সহাত্ত্বভূতিলীল মনোভাবের গঠন হতে পারে।

প্রশ্নমালা :—

(ক) উত্তরনির্বাচন

নির্দেশ—নিচের প্রত্যেকটি প্রশ্নের কয়েকটি করে উত্তর দেওয়া আছে। সঠিক উত্তরের চারদিকে বৃত্ত এঁকে দাও—

- ১। পৃথিবীকে ঘিরে কত মাইল পর্যন্ত বায়ু আছে ? — ৪০০, ৩০০, ২০০ মাইল।
- ২। কোন বস্তুর সাহায্যে বায়ু মাপা যায় ? — থার্মোমিটার, ব্যারোমিটার, রেনগেজ।
- ৩। নিম্নচাপের বায়ুর ধর্ম কি ? নিম্নগামিতা, উর্ধ্বগামিতা।
- ৪। আমেরিকার যুক্তরাষ্ট্র কোথায় অবস্থিত ? — উত্তর আমেরিকার উত্তরে; দক্ষিণে, মধ্যস্থানে।
- ৫। আয়তনে পৃথিবীর রাজ্যগুলির মধ্যে আমেরিকার যুক্তরাষ্ট্রের স্থান কত ?—দ্বিতীয়, পঞ্চম, দশম।
- ৬। আমেরিকার যুক্তরাষ্ট্রের পশ্চিমের পার্বত্য অঞ্চলের কোন পর্বত সবচেয়ে বিখ্যাত ?—আল্‌পস্, রকি, এপেলেশিয়ান।
- ৭। উত্তর আমেরিকার প্রধান নদী কোনটি ? — সেন্ট লরেন্স, রোন, মিসিসিপি।
- ৮। উত্তর আমেরিকার বৃহত্তম হ্রদ কোনটি ? — মিচিগান, সুপিরিয়র, ইরাই।
- ৯। আমেরিকার যুক্তরাষ্ট্রের রাজধানী কি ? — নিউইয়র্ক, ওয়াশিংটন, বোস্টন।
- ১০। ফ্রান্সের প্রধান খনিজ দ্রব্য কি ? — কয়লা, লৌহ, এলুমিনিয়াম।
- ১১। ফ্রান্সের প্রধান কৃষি ও দ্রব্য কি ? — গম, ধান, ধব।
- ১২। ফ্রান্সের রাজধানী কি। — ক্যালে, হাভ্‌বু, প্যারি।

(খ) শূন্যস্থানের পূরণ

নির্দেশ :—নিম্নলিখিত বাক্য সমূহের শূন্যস্থানগুলি উপযুক্ত শব্দদ্বারা পূর্ণ কর।

- ১। উত্তর আমেরিকার দক্ষিণ পশ্চিমাংশ ভূমধ্যসাগরীয় জলবায়ু দ্বারা প্রভাবিত হওয়ায় সেখানে প্রচুর — ও — জন্মায়।
- ২। আমেরিকার যুক্তরাষ্ট্রের পশ্চিমভাগের শুষ্ক ভূভূমিতে —, — ও — পালন করা হয়।
- ৩। ম্যাকেন্সি নদী — পর্বতে উৎপন্ন হয়ে — মহাসাগরে পড়েছে।
- ৪। আমেরিকার যুক্তরাষ্ট্রের — শহরে সম্মিলিত জাতিপুঞ্জের প্রধান কার্যালয়।
- ৫। আমেরিকার যুক্তরাষ্ট্র খনিজ দ্রব্যের মধ্যে — এর উৎপাদনে পৃথিবীতে প্রথম।
- ৬। নেপোলিয়ন বোনাপার্টের জন্মস্থান —।
- ৭। ফ্রান্সের সর্বপ্রধান কৃষিজাত দ্রব্য —।
- ৮। ফ্রান্সের অবস্থান — হইতে — উত্তর অক্ষাংশের মধ্যে।
- ৯। গ্রীষ্মকালে দক্ষিণ-পূর্ব এশিয়ার স্থলভাগ অত্যন্ত উত্তপ্ত হওয়ায় এই অঞ্চলের বায়ু হালকা হয়ে ওপরে উঠে যায়, সেইস্থান পূর্ণ করার জন্য স্থলভাগ থেকে যে বায়ু আসে তাকে — বায়ু বলে।
- ১০। (প্রদত্ত একটি বলয়ংকিত ভূগোলকের চিত্র।)
চিত্রটিতে প্রদর্শিত বলয়গুলির নাম যথাযথ অংশে লিখে দাও।

(গ) একশব্দের উত্তর

নির্দেশ :—নিচের প্রত্যেকটি প্রশ্নের উত্তর একটি করে শব্দ বসিয়ে উত্তর দেবে—

- ১। নিচের বাঁ-দিকের স্তম্ভে দেশের নাম দেওয়া হয়েছে, মাঝের ও দক্ষিণের স্তম্ভে যথাযথভাবে বায়ুপ্রবাহ অঞ্চল ও প্রধান ফসল কী করে কৃষিজাত দ্রব্যের নাম লিখ।—

দেশ।	বায়ুপ্রবাহ অঞ্চল	উৎপন্ন দ্রব্য
ভারতবর্ষ—	১। —	২। —
ফ্রান্স—		
২। প্রশান্ত মহাসাগরে যে ঘূর্ণবাত দেখা যায় তার নাম কি ?		
৩। ক্রান্তীয় অঞ্চলে বায়ুপ্রবাহের অভাবে জাহাজগুলিকে বহুকাল অপেক্ষা করতে হওয়ায় পানীয় জলের অভাবে ঘোড়াগুলিকে জলে কেলে দিতে হ'ত বলে' এই বলয়টিকে কি বলা হ'ত ?		
৪। নিরক্ষীয় নিম্নচাপ বলয়ের বায়ু কি প্রকার ?		
৫। কোন কোন হ্রদের সমন্বয়ে উত্তর আমেরিকার বৃহৎ পঞ্চহ্রদের সৃষ্টি ?		
৬। উত্তর আমেরিকার পার্বত্য অঞ্চল কয়টি ?		
৭। তাদের নাম লেখ।		
৮। আমেরিকার যুক্তরাষ্ট্রের পূর্ব ও উত্তরসীমায় কি আছে ?		
৯। ফ্রান্সের প্রধান নদীগুলির নাম কি ?		
১০। লিল শহর কিসের জন্য বিখ্যাত ?		

- ১১। মিশরকে—দান বলা হয়।
- ১২। দক্ষিণ আফ্রিকার—নদী আটলান্টিক ও —নদী ভারত মহাসাগরে পড়েছে।
- ১৩। তাসমানিয়ার তাপমান বছরের সব সময়েই অপেক্ষাকৃত—।
- ১৪। অষ্ট্রেলিয়ার তৃণাঞ্চলে— —সাহায্যে জলসেচন করে গমের চাষ হয়।
- ১৫। প্লাটিনাসের ঠোঁট ও পা—এর মতো।
- ১৬। পৃথিবীর সর্বাপেক্ষা দ্রুতগামী প্রাণী—
- ১৭। অষ্ট্রেলিয়ার উত্তর ও পশ্চিমদিকে—মহাসাগর।
 ,, দক্ষিণে—মহাসাগর
 ,, পূর্বদিকে—নামক স্বদীর্ঘ পর্বতশ্রেণি বিভিন্ন দেশে বিভিন্ন নামে পরিচিত। ইহাকে ডিক্টোরিয়ায়—,
 নিউ সাউথ ওয়েলসে—ও কুইন্সল্যান্ডে—বলে।
- ২০। অষ্ট্রেলিয়ার উল্লেখযোগ্য নদী—এর উৎপত্তিস্থল—।
- ২১। শীত ও উত্তাপের তারতম্য ও বৃষ্টিপাতের ভেদে বছর কয়েকটি—দেখা যায়
- ২২। যে নির্দিষ্টপথে পৃথিবী সূর্যকে বছরে একবার প্রদক্ষিণ করে তাকে পৃথিবীর—পথ বলে।
- ২৩। পৃথিবীতে ফলের জন্ম প্রসিদ্ধ—অঞ্চল।
- ২৪। নিরক্ষরেখার উত্তরে—মাস হইতে—মাস শীতকাল।
- ২৫। দক্ষিণ আমেরিকার পূর্ণদিকে—নামক উপজাতির বাস।
- ২৬। ,, ,, পশ্চিমদিকে—নামক স্বসভা জাতি বাস করিত।
- ২৭। দঃ আমেরিকার ইণ্ডিয়ান ও স্প্যানিশদের সন্তানদের—বলে।
- ২৮। শীতল স্রোতের জন্ম দঃ আমেরিকার—উপকূল শীতল।
- ২৯। উষ্ণ ,, ,, — ,, উষ্ণ।
- ৩০। চিলির উত্তরাংশে—মরুভূমি অবস্থিত।

গ সংক্ষিপ্ত উত্তর (স্বতিনির্ভর)

- নিচের প্রশ্নগুলির উত্তর পাশের নির্দিষ্ট স্থানে একটি মাত্র শব্দ, বাক্য বা বাক্যাংশ লিখে দাও—
- ১। কি কারণে—
 অষ্ট্রেলিয়ার পশ্চিমাঞ্চল মরুভূমি ?—
 ,, বড় বড় শহর সমুদ্রতীরে অবস্থিত ?—
 অষ্ট্রেলিয়া গম রপ্তানি করে ?—
- ২। পর্বত কয় প্রকার ?—
 কি কি ?—
- ৩। সূর্য ও পৃথিবীর কে কার চারদিকে ঘোরে ?—
- ৪। অক্ষাংশ ও দ্রাঘিমাংশ কাকে বলে ?
- ৫। নিরক্ষীয় অঞ্চলে কি কি জীবজন্তু বাস করে ?—
- ৬। শান্তানার তৃণভূমিতে কি কি— ,, ,,

(ঘ) সজ্জীকরণ

নিচের প্রত্যেকটি প্রশ্নে ঐ দিকের শুষ্ক তিনটি করে প্রশ্ন ও জানদিকের শুষ্ক তাদের উত্তর এলোমেলোভাবে দেওয়া আছে। যথাযথ প্রশ্নের সংগে যথাযথ উত্তরগুলি তীরাংকিত রেখা দিয়ে সংযুক্ত করে দাও।

- ১। (ক) পশ্চিমা বায়ু কাকে বলে ?
(খ) সাইক্লোন কি ?

(গ) স্থানীয় বায়ু বলতে কি বোঝ ?

- ২। (ক) আমেরিকার যুক্তরাষ্ট্রের উত্তর
পশ্চিম অংশে সারাবছর বৃষ্টির হয় কেন ?

(খ) কি কাজ করার ফলে আমেরিকার
যুক্তরাষ্ট্রের সমুদ্রপৃষ্ঠের ঘাতাঘাতের সুবিধা রয়েছে ?

(গ) আমেরিকার যুক্তরাষ্ট্রের উন্নতির
প্রধান কারণ কি ?

- ৩। (ক) উত্তর আমেরিকার
সবচেয়ে বড় মৎস্য ব্যবসার কেন্দ্র কি ?

(খ) কানাডার সবচেয়ে বড়
শহর ও বন্দর কি ?

(গ) ভিক্টোরিয়া আমেরিকার
যুক্তরাজ্যের কোন্ রাজ্যের রাজধানী ?

বা স্থানীয় কারণে হয়।

কর্কট ও মকরক্রান্তীয় উর্ধ্বচাপ বলয়

থেকে যে বায়ু যথাকালে উত্তর ও

দক্ষিণ মেরুর দিকে প্রবাহিত হয়।

যখন চারিদিকে উচ্চচাপ থেকে

বায়ুপ্রবাহ বেগে ছুটে আসে।

পানামা খালের খনন।

সুন্দর যোগাযোগ ব্যবস্থা।

প্রশান্ত মহাসাগরের তীরে

অবস্থিত হওয়ায়।

বৃটিশ কলম্বিয়া

সেন্ট জন্স

মন্ট্রিল।

নবম শ্রেণি

বিষয় বস্তু : ঋতু পরিবর্তন, বায়ুপ্রবাহ, বায়ুচাপ, তাপমণ্ডল প্রভৃতি যে সব প্রাকৃতিক বিষয় আগের শ্রেণিগুলিতে পড়ানো হয়েছে; সেগুলির আরো বিস্তৃত আলোচনা ও পৃথিবীর বিভিন্ন দেশের জলবায়ু এইসব শক্তির দ্বারা কি ভাবে নিয়ন্ত্রিত হয় তার অল্পবন্ধস্থাপন (Correlation) এই শ্রেণির কাজ। যেমন, সাময়িক বায়ু, সমুদ্রবায়ু ও স্থলবায়ু কি ভাবে পৃথিবীর আবর্তনের সংগে যুক্ত হয়; স্থল ও সমুদ্রবায়ু কি ভাবে পৃথিবীর পরিক্রমণের ফলে বিশেষ ঋতুতে মৌসুমী বায়ুরূপে প্রবাহিত হয়; কি ভাবে দিনরাত্রির হ্রাসবৃদ্ধি হ্রদের লব্ধ ও তির্যক রশ্মি কক্ষপথে পৃথিবীর অবস্থান পৃথিবীর পৃষ্ঠে স্থল ও জলভাগের বণ্টন প্রভৃতি এই বায়ুর উৎপত্তির কারণস্বরূপ মৌসুমীবায়ুসেবিত “মৌসুমী জলবায়ুর” অন্তর্গত অঞ্চল এই প্রাকৃতিক কার্যকারণপরম্পরার দ্বারা কিরূপ ফললাভ করে অর্থাৎ এরা কিভাবে মহাদেশ-সমূহের জলবায়ু ও ভূপ্রকৃতি নির্ধারিত করে এই সমস্ত আলোচনা এই শ্রেণিতে হবে।

- ২। (ক) মৌসুমী অঞ্চল
(খ) নিরক্ষীয় অঞ্চলে
(ঘ) ভূমধ্যসাগরীয় অঞ্চলে
- ৩। (ক) বায়ুতে বখন তাপ বেশি।
(খ) উচ্চতাপের বায়ু।
(গ) পৃথিবীর তাপ বিম্ববরেখা।
- ৪। (ক) যে অংশকে নিরক্ষীয় শাস্ত বলয় বলে
(খ) যে অংশকে অশাক্ষবৃত্ত বলে।
(গ) যে অঞ্চলে উত্তর পশ্চিম প্রত্যয়নবায়ু বয়
(ঘ) বিম্বব রেখার যে অংশে স্থল ভাগ বেশি।
(ঙ) মেক্স প্রদেশের তুবার ঝড়ের নাম।
- চিরহরিৎ বৃক্ষের অরণ্য আছে ()
ক্ষুদ্র ও পুরু পত্রবিশিষ্ট গাছ জন্মে ()
পর্ণমোচী বৃক্ষের অরণ্য আছে ()
স্বর্ধের উত্তরায়ণ ও দক্ষিণায়ণের সংগে পরিবর্তিত হয় ()
তখন বায়ুর চাপ কম হয়। ()
নিম্নচাপের বায়ুর দিকে প্রবাহিত হয় ()
দক্ষিণ গোলাধ' ()
ব্রিজার্ড ()
নিরক্ষরেখা থেকে ৫০ উত্তর ও দক্ষিণ ()
উত্তর গোলাধ' ()
উত্তর ও দক্ষিণে ৩০ — ৩৫ অক্ষাংশের মধ্যে ()

ইতিহাস

ষষ্ঠ শ্রেণি

ভূমিকা—মহিলা শিক্ষণশিক্ষামহাবিদ্যালয়ের শিক্ষাসপ্তাহে ইতিহাস বিভাগে মূল্যায়নের জন্য বিশেষ আলোচনাসভা অধ্যাপিকা শ্রীমতী অপরাঞ্জিতা রায়ের পরিচালনাম্বীনে নির্বাহিত হয়। এই বিভাগে বক্তৃতাশ্রবণ অংশ গ্রহণ করিয়া ছিলেন।

প্রথমদিন ৭ই জানুয়ারী পাঠ্যসূচী অনুযায়ী মাধ্যমিক ও উচ্চমাধ্যমিক বিদ্যালয়ে যে ইতিহাস বর্তমানে পড়ানো হচ্ছে তার উদ্দেশ্য গুলি বিবেচনা করা হয়। দ্বিতীয় দিন, যাটই জানুয়ারি, আগের কাজের আলোচনার ভিত্তিতে বস্তুমূলী বা নৈব্যক্তিক পরীক্ষার (objective tests) ভিত্তিস্থাপন করে' ষষ্ঠ শ্রেণির উপযোগী বিভিন্ন দলে ভাগ হয়ে বিভিন্ন প্রকারে প্রশ্ন তৈরী করার সিদ্ধান্ত গৃহীত হয়। বাকি দুইদিনে আলোচনাকারিণীর প্রশ্নের ধরনের অনুসারে বিভিন্ন দলে ভাগ হয়ে বিভিন্ন প্রকারে প্রশ্নরচনা করেন।

উদ্দেশ্য—বর্তমানে ইতিহাস সম্বন্ধে পূর্বপ্রচলিত দারণার আমূল পরিবর্তন হয়েছে। এখন ইতিহাস আর গল্পকথা নয়। বৈজ্ঞানিক দৃষ্টিভঙ্গি নিয়ে সত্যের প্রতি লক্ষ্য রেখে ইতিহাসের বিভিন্ন উপাদানকে সক্ষমভাবে বিচার ও বিশ্লেষণ করে' ইতিহাস রচনা ও শিক্ষাদান করার পদ্ধতি আক্ষকাল প্রচলিত হয়েছে।

ষ্টানলি হলের সাংস্কৃতিক যুগতত্ত্ব অনুসারে আদিম যুগের মানবসভ্যতার ক্রমাবিকাশের স্তর অনুযায়ী ইতিহাসের পাঠ্যক্রমকে শৈশব, বাল্য ও কৈশোর এই তিন স্তরে ভাগ করা উচিত। সেই হিসেবে শিশুদের প্রাথমিক স্তরে প্রাচীনযুগের ইতিহাস, মাধ্যমিক স্তরে মধ্যযুগের ইতিহাস এবং উচ্চমাধ্যমিক স্তরে আধুনিক যুগের ইতিহাস শিক্ষা দেওয়া উচিত। যদিও এই মতবাদটি অনেক ক্রটিপূর্ণ, তবু ইতিহাসের পাঠ্যক্রমরচনায় এর উপযোগিতা অস্বীকার করা যায় না।

এখন ষষ্ঠ শ্রেণি থেকে মাধ্যমিক স্তর ধরা হয়। ইতিহাসের প্রথম ধাপ হিসেবে তখন ছাত্রদের সভ্যতার গোড়ার কথার সংগে পরিচয় না করালে চলে না। এই শ্রেণীতে তাদের বয়স ১০ + থেকে ১১ + এর বাস্তববোধ জাগ্রত হয়, হুঃসাহাসিক অভিযান, যুদ্ধ, উত্তেজনাময় কাজ প্রভৃতির প্রতি তাদের একটা স্বাভাবিক আকর্ষণ দেখা যায়। তাই তাদের এইসব চাহিদার দিকে লক্ষ্য রেখে পাঠ্যক্রমের নির্ধারিত করা হয়। এই শ্রেণির পাঠ্যক্রমের মধ্যে দিয়ে তারা জাতীয় ইতিহাস হিসেবে ভারতীয় সভ্যতার কথা পড়ে এবং অতি প্রাচীনকালে

তুলনায় খাঙ্ক জগৎ কোনস্থানে আছে তা জানতে পারে। এতে তাদের চিন্তাশক্তি বৃদ্ধি পায়, স্বাধীনতার প্রতি প্রকৃষ্ট জন্মে এবং আন্তর্জাতিকাবোধ জাগ্রত হয়।

সপ্তম শ্রেণীতে মধ্যযুগের ইতিহাস পাঠ্যরূপে স্থির করা হয়েছে। এই যুগকে সাধারণত সভ্যতার অবনতির ইতিহাস বলে গণ্য করা হয়। যুরোপের ইতিহাসের প্রসঙ্গে কথ্য কতকটা সত্য হ'লেও যুরোপের বাইরে মধ্যযুগের ইতিহাস বিশ্বসভ্যতার ইতিহাসে একটা স্বর্ণীয় অধ্যায়। এই সময়ে ইসলাম ধর্মের উন্নতি ও আরব সভ্যতার বিকাশ, চীন, জাপান ও মধ্য এশিয়ায় ভারতীয় শিল্প, বাণিজ্য ও সভ্যতার বিস্তার, তাং বংশের রাজত্ব কালে চীনা সভ্যতার গৌরব—এসব থেকে প্রমাণিত হয় যে যুরোপের বাইরে মধ্যযুগ একেবারে অন্ধকারময় ছিলনা। তাছাড়া যুরোপেও পঞ্চদশ শতাব্দীতে চিন্তাজগতে যে নতুন জাগরণ এসেছিল, তারও সূচনা হয়েছিল মধ্যযুগের দ্বিতীয় অর্ধে। সুতরাং মধ্যযুগে ইতিহাসের প্রবাহ অক্ষয় ছিল এবং সপ্তম শ্রেণীর ছাত্রেরা তারই অঙ্কশীলন করে।

অষ্টম শ্রেণীর পাঠ্য আধুনিক যুগের ইতিহাস। এই যুগে মানবের চিন্তাধারা এবং রাজনৈতিক, সামাজিক ও অর্থনৈতিক ব্যবস্থায় একটি আমূল পরিবর্তন শুরু হয়। চিন্তার স্বাধীনতা, ব্যক্তিগত স্বাভাবিক জাতীয়তাবোধ, বিজ্ঞানের উন্নতি, যন্ত্র শিল্পের প্রচলন ও যানবাহনের উন্নতির ফলে বিভিন্ন দেশ ও জাতির মধ্যে ঘনিষ্ঠ যোগাযোগ স্থাপন এবং আঞ্চলিক সভ্যতার পরিবর্তে বিশ্বসভ্যতার বিকাশ এই যুগের ইতিহাসের প্রধান বৈশিষ্ট্য। প্রাচীন ও মধ্যযুগের তুলনায় আধুনিক ইতিহাস জটিল তাই ষষ্ঠ ও সপ্তম শ্রেণীতে ছাত্রেরা বিভিন্ন প্রাচীন সভ্যতার উদ্ভব ও ক্রমবিকাশের দ্বারা সন্মুখিত যে ধারণা লাভ করে তার পটভূমিতে আধুনিক যুগের ইতিহাস অষ্টম শ্রেণীর পড়ানো যুক্তিযুক্ত বলে গণ্য করা যেতে পারে।

এইভাবে ষষ্ঠ সপ্তম এবং অষ্টম শ্রেণীতে ইতিহাসের যে পাঠ্যক্রম নির্ধারিত হয়েছে তাতে ইতিহাস সন্মুখিত ছাত্রদের প্রাথমিক জ্ঞানের ভিত্তি গড়ে ওঠে। নবম শ্রেণীর শিক্ষার্থীদের বেক্রম মানসিক গঠন তাতে তাদের কোনো একটি বিষয় বিশেষ ও বিস্তারিত ভাবে জানার আগ্রহ জন্মায় এবং তাদের দৃষ্টিভঙ্গি ও চিন্তাশক্তি প্রসার লাভ করে। নবম থেকে একাদশ শ্রেণীর পাঠ্যক্রম এই দিকে দৃষ্টি রেখে করা হয়েছে।

কোনো বিষয় বিস্তারিত ভাবে জানতে গেলে প্রথমে সীমাবদ্ধ গভীর থেকে আরম্ভ করার প্রয়োজন, সমগ্র বিশ্বের ইতিহাস জানার আগে নিজের ইতিহাস জানা উচিত। কাজেই নবম ও দশম শ্রেণীতে ও একাদশ শ্রেণীর ও কিয়দংশে ভারতের ইতিহাসকেই গভীরতর ও বিস্তৃততর ভাবে অঙ্কশীলনের চেষ্টা হয়েছে।

পরবর্তী স্তরে, স্নাতকোত্তর শ্রেণীতে, অনেকে ইতিহাস পড়ে না, কিন্তু আজকের ছাত্রেরা ভবিষ্যতের নাগরিক, নিজের যুগকে জানা তাদের একান্ত প্রয়োজনীয় এবং এই জানাকে দেশের মধ্যে সীমাবদ্ধ না রেখে বৃহত্তর পটভূমিতে উত্তীর্ণ করা বাঞ্ছনীয়। তাই একাদশ শ্রেণীতে আধুনিক যুগের বিশ্বের ইতিহাস জানানোর চেষ্টা হয়েছে, যাতে প্রত্যেক ছাত্র আধুনিক যুগের রাষ্ট্রনৈতিক, অর্থনৈতিক ও সাংস্কৃতিক গতি প্রকৃতি সন্মুখিত অবহিত হ'তে পারে।

প্রশ্ন সমূহ—আলোচনাচক্রে ষষ্ঠ শ্রেণীর উপযোগী করে ১০০ নম্বরের একটি প্রশ্নপত্র তৈরি করা হয় এর মধ্যে

নিম্নলিখিত প্রচারের প্রশ্ন আছে—

- | | | |
|------------------------|--------------------------|------------------------------|
| (১) মানচিত্র নির্দেশন, | (২) শূন্যস্থান পূরণ, | (৩) সত্যমিথ্যানির্ধারণ, |
| (৪) সাময়িকনির্ণয়, | (৫) যোগ্য উত্তরনির্বাচন, | (৬) ধারাবাহিকী সাজানো, |
| (৭) মর্মগ্রহণ, | (৮) বিচার ও | (৯) কালানুক্রমিকভাবে সাজানো। |

প্রশ্নগুলি নিচে দেওয়া হ'ল।

ক। মানচিত্রনির্দেশ—

নম্বর ১২

(ছটি যুরোশিয়ার রেখামানচিত্র দেওয়া হবে, প্রথমটিতে রোমের বাণিজ্যপথ ও দ্বিতীয়টিতে আলেকজান্দারের অভিবানপথ রেখার দ্বারা অংকিত)

নির্দেশ—ওপরের মানচিত্র ছ'টি লক্ষ্য কর ও নিচের প্রশ্নের উত্তর দাও—

১। রোমের সংগে অতি প্রাচীনকালে কোন কোন দেশের বাণিজ্যিক সম্পর্ক স্থাপিত হয়েছিল এবং রোমের বাণিজ্যপোত কোন কোন মহাসাগর অতিক্রম করেছিল লেখ।

২। আলেকজান্দার যে-যে দেশ জয় করেছিলেন তাদের নাম পরপর লেখ।

খ। শূন্যস্থান পূরণ—

নম্বর ১০

নির্দেশ—যথাযথ শব্দ বসিয়ে নিচের শূন্যস্থানগুলি পূর্ণ কর।

- ১। — বন্দরের নাম অনুসারে নাম হয়েছে কার্থেজ।
- ২। রোম ও কার্থেজের যুদ্ধকে — যুদ্ধ বলা হয়।
- ৩। প্রথম যুদ্ধে কার্থেজের রণতরীগুলি প্রথম দিকে জয় করলেও শেষ পর্যন্ত — পরাজিত হ'ল।
- ৪। কার্থেজের সর্বপ্রধান বারকাপরিবারের শ্রেষ্ঠ ব্যক্তি ছিলেন—
- ৫। — যুদ্ধে হ্যানিবল পরাজিত হ'লেন
- ৬। কার্থেজের বড়যন্ত্রকারীদের নেতা ছিলেন—।
- ৭। তাঁর বক্তৃতার শেষ কথা ছিল —।
- ৮। রোমান ঐতিহাসিক — লিখেছেন রোমের ইতিহাস
- ৯। ভার্জিল রচিত কাব্যের নাম—।
- ১০। “জার্মানদের উৎপত্তি” বইখানি লেখেন —।
- ১১। ইতিহাসের জনক নামে পরিচিত—।
- ১২। মেসোপটেমিয়ার ইতিহাসের প্রথম যে সভ্যজাতির কথা আমরা জানতে পাই তার নাম —।
- ১৩। প্রাচীন মিশরের লেখার পদ্ধতিকে বলা হয় —।
- ১৪। বৌদ্ধদের ধর্ম গ্রন্থের নাম —।
- ১৫। —চন্দ্রগুপ্ত বিক্রমাদিত্যের রাজত্বকালে চৈনিক বৌদ্ধ তীর্থযাত্রী — ভারতবর্ষে এসেছিলেন।
- ১৬। চাণক্য — নামে একখানি বই লিখেছিলেন
- ১৭। মাসিডন রাজ ফিলিপ তাঁর পুত্র আলেকজান্দারের শিক্ষার ভার দিয়েছিলেন বিশ্ববরেজ্ঞ পণ্ডিত — এর উপর
- ১৮। গ্রীকদের প্রাধান উপজীবিকা ছিল কৃষি ও —।
- ১৯। কুষাণ রাজাদের মধ্যে সর্বশ্রেষ্ঠ ছিলেন —।
- ২০। — ছিলেন রোমের শক্তিশালী যোদ্ধাদের মধ্যে সর্বাপেক্ষা বিখ্যাত

গ। সত্যমিথ্যানিধারণ—

নম্বর ৮

নির্দেশ—নিচের কতকগুলি বাক্যের মধ্যে নানা তথ্য পরিবেশিত হয়েছে, সত্য তথ্যগুলির পাশের বন্ধনীতে (✓) ও মিথ্যগুলির পাশে বন্ধনীতে (×) চিহ্ন দাও

- ১। মিশরের সভ্যতা নীলনদের তীরে গড়ে উঠেছিল।

- ২। সিদ্ধ উপত্যকার অধিবাসীদের লৌহপাত্র অত্যন্ত সুন্দর ছিল। ()।
- ৩। ব্যাবিলনের রাজাদের মধ্যে হামুরাবি প্রসিদ্ধ ছিলেন। ()।
- ৪। এসিরিয়ায় মাটি ও ইটের কাজ হ'ত ()।
- ৫। রোমের আইনই হ'ল রোমের শ্রেষ্ঠ অবদান ()।
- ৬। সিদ্ধ সভ্যতা আসলে ছিল গ্রাম্য সভ্যতা ()।
- ৭। বুদ্ধ যে তরুণে বোধিলাভ করেছিলেন তার নাম কল্লতরু ()।
- ৮। বৌদ্ধ ধর্মগ্রন্থের নাম জাতক ()।
- ৯। নৌ-বিজ্ঞান ফিনিশীয়দের জুড়ি ছিল না ()।
- ১০। হ্যানিবল যে নগর প্রতিষ্ঠা করেন তারই নাম রোম ()।
- ১১। রোম ও গ্রীসের মধ্যে পিউনিক যুদ্ধ হয়েছিল ()।
- ১২। ট্যাসিটাস ছিলেন শ্রেষ্ঠ বক্তা ও ঐতিহাসিক ()।
- ১৩। অগস্টাসের পর জুলিয়াস সিজার রোমের সম্রাট হয়েছিলেন ()।
- ১৪। রোমের সর্বময় কর্তৃত্ব থাকতো দুইজন কন্সলের হাতে ()।
- ১৫। গুপ্ত রাজগণের মধ্যে প্রথম চন্দ্রগুপ্ত শ্রেষ্ঠ ছিলেন ()।
- ১৬। গুপ্ত রাজগণের রাজত্বকালে বাংলা ও পাঞ্জাবে বৌদ্ধ ধর্মের প্রসার হয়েছিল ()।

(নম্বর ৫)

ঘ। সামঞ্জস্যনির্ণয় :

নির্দেশ—নিচের সমজাতীয় শব্দগুলোর প্রত্যেকটির মধ্যে একটি করে 'বিজাতীয় শব্দ' আছে, সেটির চারিদিকে বৃত্ত একে চিহ্নিত কর।

- ১। মেগাস্থিনিস, ফাহিয়েন, হামুরাবি, হিউয়েন সাং।
- ২। মিশর, আফ্রিকা, মেসোপটেমিয়া, সিদ্ধ উপত্যকা, চীন।
- ৩। নাগার্জুন, অশ্বঘোষ, চরক, হরিসেন।
- ৪। ইসকিলাস, ইউরিপিডিস, গণ্ডোফারনিস, সফোক্লিস।
- ৫। হেরোডোটাস, দারিয়ুস, থুকিডিডিস।

ঙ। যোগ্য উত্তর নির্বাচন :—

নির্দেশ—নিচের প্রত্যেকটি বাক্যের মধ্যে বন্ধনীস্থিত অংশে কয়েকটি করে 'শব্দ' দেওয়া আছে, প্রত্যেক ক্ষেত্রেই যেটি সেই স্থানে বসার যোগ্য তার চারদিকে বৃত্তদ্বারা চিহ্নিত কর :

- ১। এথেন্স রাষ্ট্রটি (উত্তরগ্রীস, মধ্যগ্রীস, দক্ষিণ গ্রীস) এ অবস্থিত ছিল।
- ২। গ্রীসের গণতান্ত্রিক শাসন ব্যবস্থা (স্পার্টা এথেন্স, কোরিন্থ, থিবস) রাষ্ট্রে প্রচালিত ছিল।
- ৩। স্পার্টা ছিল (শিক্ষাদীক্ষায়, শিল্পকলায়, সাহিত্যে, যুদ্ধবিজ্ঞানে) সকল রাষ্ট্রের সেরা।
- ৪। হেলট একটি (রাষ্ট্রের ব্যক্তির, সম্প্রদায়ের) নাম।
- ৫। পেরিক্লিস ছিলেন এথেন্সের একজন শ্রেষ্ঠ (বৈজ্ঞানিক, সাহিত্যিক, ঐতিহাসিক, দেশনেতা, ভাস্কর)।
- ৬। গ্রীসের বিখ্যাত ঐতিহাসিকদের ছিলেন (ফিডিয়াস, ইসকাইলাস, সফোক্লিস, থুকিডিডিস, ক্যাস্টিনস হেরোডোটাস)।

- ৭। এথেন্সের ভাস্কর্য শিল্পের শগুন পরিচয় দেয় (পার্থিনন, ইকটিলাস, এগোয়া, ইউরিপিডিস, প্রোশালিয়া) প্রভৃতি সুন্দর প্রাসাদ ও তোরণ।
- ৮। গ্রীসের বিখ্যাত দার্শনিক ছিলেন (সফোক্লিস, সফ্রেটিস, প্লেটো)
- ৯। চন্দ্রগুপ্তের পিতা (খিলজি, গুপ্ত, নন্দ) রাজবংশের ছিলেন।
- ১০। মৌর্যবংশের প্রতিষ্ঠাতার নাম (মহাপদ্ম, চন্দ্রগুপ্ত, বিম্বিসার)
- ১১। অশোক (গুপ্ত, মৌর্য, নন্দ) বংশের রাজা ছিলেন।
- ১২। বৌদ্ধ ধর্ম গ্রহণের পূর্বে অশোকের নাম ছিল (সূর্যসখা, চণ্ডাশোক, পার্থসারথি)
- ১৩। জনকল্যাণের নিমিত্ত অশোক (পথের ধারে বৃক্ষরোপণ করেন, প্রজাদের ওপর অত্যাচার করেন, রাজকর বৃদ্ধি করেন)

চ। সঠিক উত্তর নির্বাচন :—

(নম্বর ১০)

নির্দেশ—নিচের বাক্যগুলির পাশের বন্ধনীতে অক্ষর বসিয়ে দাও কোনটি কোন দেশের বিষয়ে বলা হয়েছে।
মিশরের সম্পর্কে “মি”, মেসোপটেমিয়ার “মে” সিন্ধু সভ্যতার “সি” আর যে টি সকলের পক্ষে সত্য তার “স” বসায়।

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| ১। পৃথিবীর প্রাচীনতম সভ্যতা | () |
| ২। নদীমাতৃক সভ্যতা | () |
| ৩। পিরামিড, মমি, ফিংক্স নির্মিত হয়েছিল | () |
| ৪। সূর্যদেবতার উপাসনা করতো | () |
| ৫। ঝুলন্ত উত্থান নির্মিত হয়েছিল | () |
| ৬। লোকে জ্যোতির্বিজ্ঞান চর্চায় পারদর্শিতা লাভ করেছিল | () |
| ৭। সোনা, রূপা, তামা, ব্রোঞ্জ প্রভৃতি ধাতুর ব্যবহার জানতো | () |
| ৮। কৃষিকার্য ও শিল্প বাণিজ্যের প্রভূত উন্নতি হয়েছিল | () |
| ৯। লোকে শিবশক্তির উপাসক ছিল | () |
| ১০। ইটের ব্যবহার জানা ছিল | () |
| ১১। পৃথক পৃথক নগর রাষ্ট্রের পত্তন হয়েছিল | () |
| ১২। মাটির ফলকে লিপির প্রাচলন হয়েছিল | () |
| ১৩। লোকে কচ্ছপের অস্থিদ্বারা দৈবগণনায় বিশ্বাসী ছিল | () |
| ১৪। প্রকৃতিদেবীর উপাসনা করতো | () |
| ১৫। সুন্দর সুন্দর মন্দির ও অট্টালিকা নির্মিত হয়েছিল | () |

ছ। ধারাহুয়ারী সজ্জিত করা :—

(নম্বর ১০)

নির্দেশ—প্রদত্ত উক্তি অশোকের তিনটি বৈশিষ্ট্যের উল্লেখ করা হয়েছে এবং নিচে সেগুলির সমর্থক কতকগুলি উক্তি দেওয়া হয়েছে। যে উক্তিগুলি যে বৈশিষ্ট্যের পরিচায়ক সেগুলির ক্রমিক সংখ্যা উপযুক্ত স্তম্ভে বসায়।

স্তম্ভ—ধর্মপ্রচারক ও প্রজাহিতৈসী দুর্বল রাজনীতিক

প্রদত্ত উক্তি—“অশোক পৃথিবীর ইতিহাসে শ্রেষ্ঠ ধর্মপ্রচারক ও প্রজাহিতৈসী রাজা হ’লেও শ্রেষ্ঠ রাজনীতিক ছিলেন না।

সমর্থক উক্তি—

- ১। অশোকের কলিংগ জয়ই প্রথম ও একমাত্র রাজ্যজয়।

- ২। অশোক অহিংসা ধর্মাবলম্বী ছিলেন।
- ৩। তিনি ধর্ম প্রচারের জন্ত কন্যা পুত্রকে সিংহলে পাঠান।
- ৪। জনসাধারণের মধ্যে বৌদ্ধধর্ম প্রচারের জন্ত রাজ্যে মহামাত্র প্রভৃতি কর্মচারীদের নিযুক্ত করেন।
- ৫। সেনাবাহিনীর গঠন ও সংরক্ষণের প্রতি অশোক দৃষ্টি দেননি।
- ৬। তিনি জনসাধারণের জন্ত বৃক্ষরোপণ ও পান্ডুশালা স্থাপন করেন।
- ৭। তিনি তাঁর উত্তরাধিকারীদের যুদ্ধবিজ্ঞা বা রাজ্যশাসনের শিক্ষায় উৎসাহিত করেননি।
- ৮। তিনি পাহাড়ে, স্থূপে, স্তম্ভে বুদ্ধের উপদেশ উৎকীর্ণ করেন।
- ৯। তাঁর রাজ্যসীমা চন্দ্রগুপ্তের অপেক্ষা বিস্তৃত হয়নি।
- ১০। তাঁর অধীনস্থ কর্মচারীরা রাজ্যশাসন অপেক্ষা ধর্মপ্রচারে যত্নবান ছিল।

ঞ। উত্তরনির্বাচন :—

নির্দেশ—নিচের প্রত্যেক উক্তির পর কতকগুলি কারণ দেওয়া হয়েছে। প্রত্যেক ক্ষেত্রেই সবচেয়ে উপযুক্ত কারণের চারদিকে বৃত্ত অংকিত করে দাও।

১। আলেকজান্ডার পক্ষে মগধ জয় সম্ভব হয়নি কারণ—

- মগধে পরাক্রান্ত নন্দবংশীয় রাজগণ রাজত্ব করতেন।
- গ্রীকসৈন্যগণ দীর্ঘকাল যুদ্ধ করে ক্লান্ত হয় ও দেশে ফেরার জন্ত উদগ্রীব হয়ে পড়ে।
- নন্দরাজাদের তুলনায় আলেকজান্ডারের সৈন্য সংখ্যা কম ছিল।
- পথে নানা উপজ্ঞাতির বিদ্রোহ দমনে তাঁকে ব্যস্ত থাকতে হয়।

২। গুপ্তযুগকে স্বর্ণযুগ বলা হয়, কারণ—

- এই যুগে দেশে পূর্ণ শান্তি বিরাজ করতো।
- দেশের বাণিজ্য ও ধনসম্পদ খুব বেড়েছিল।
- ভারতীয় সাহিত্য, বিজ্ঞান, চিত্রকলা, স্থাপত্য, ভাস্কর্য ও চিত্রবিজ্ঞা প্রভৃতি সর্ববিষয় উন্নতির উচ্চশিখরে উঠেছিল।
- বিক্রমাদিত্য নবরত্ন সভার খ্যাতি চারদিকে ছড়িয়ে পড়েছিল।

৩। ম্যারাথনযুদ্ধে পারস্য পরাস্ত হয়, কারণ—

- পারসিক সৈন্যগণ সাহসের সংগে যুদ্ধ করেনি।
- গ্রীক সৈন্যরা মাথাখ শিরস্ত্রাণ ও গায়ে বর্ম পরায় পারসিকদের তীর তাদের বিদ্ধ করতে পারেনি।
- এই যুদ্ধে মিলটিয়াডিসের অধীনে এথেনীয় বাহিনী যুদ্ধজয়ের দৃঢ়সংকল্প নিয়েছিল।
- ম্যারাথনের ক্ষুদ্র প্রান্তরে পারসিকরা তাদের বিপুল সৈন্যবাহিনীর যথাযথ সমাবেশ করতে পারেনি।

৪। বৌদ্ধধর্মের প্রসারের কারণ—

- অহিংসা ও প্রেম এই ধর্মের মূলনীতি ছিল।

—বুদ্ধদেব জ্ঞানী ছিলেন।

—সকলের বোধগম্য ভাষায় এই ধর্মের প্রচার হয়েছিল।

—এই ধর্ম রাজত্ববর্গের পৃষ্ঠপোষকতা লাভ করেছিল।

ব্রাহ্মণ্য ধর্মের প্রতিক্রিয়া স্বরূপ এই ধর্মের উদ্ভব হয়েছিল।

ট। কালানুক্রম—

নির্দেশ :—নিচের বাক্যগুলিতে যে-সব ঘটনা ভাবধারা ও ব্যক্তিবর্গের বিষয়ে লেখা হয়েছে তার ক্রমিক অক্ষর গুলিকে কালানুক্রমিক ভাবে সাজিয়ে সময়ের নির্দেশ কর—

- ১। (ক) মানুষ তারপর ধীরে ধীরে আগুনের ব্যবহার শিখলো।
 (খ) প্রাচীন মানুষের জীবন ছিল বল ও অসভ্য।
 (গ) তারপর সে চাষ-আবাদ আরম্ভ করলো।
 (ঘ) যে শুধু পশু শিকার করে জীবিকানির্বাহ করতো।
 (ঙ) মানুষ ক্রমে গরু, ভেড়া, মহিষ, প্রভৃতি পশুপালন শিখলো।
- ২। (ক) মহামতি অশোক প্রিয়দর্শী নামে খ্যাত ছিলেন।
 (খ) দ্বিতীয় চন্দ্রগুপ্ত শকারি নামে পরিচিত ছিলেন।
 (গ) চন্দ্রগুপ্ত মৌর্য সাম্রাজ্যের প্রতিষ্ঠা করেন।
 (ঘ) কুষাণ রাজাদের মধ্যে সর্বাপেক্ষা বিখ্যাত ছিলেন কনিষ্ক।

৩। আলোকজ্ঞানার পরপর কোন রাজ্য জয় করেছিলেন—

(ক) মিশর (খ) দামাস্কাস, সিডন, টায়ার (গ) তক্ষশীলা (ঘ) পারস্ত (ঙ) পুরুষ রাজ্য।

৪। এরূপ কার পর কে জয়েছিলেন—

(ক) যিশুখৃষ্ট (খ) বুদ্ধদেব (গ) মোজেস (ঘ) মহাবীর (ঙ) সমুদ্র গুপ্ত (চ) মেগাস্থিনিস।

মন্তব্য :—উচ্চ ও উচ্চতর মাধ্যমিক বিদ্যালয়ে যষ্ঠশ্রেণী সবচেয়ে নিচের শ্রেণী বলে এই শ্রেণীর উপযোগী নৈর্ব্যক্তিক পরীক্ষার প্রশ্নপত্র রচনা নিয়ে সন্দেহের অনকাশ থাকতে পারে। এখানে সমগ্র প্রশ্নপত্র বস্তুমুখী পরীক্ষার ভিত্তিতে তৈরি করে দেখানো হয়েছে যে যে-কোনো অধ্যায়ের ওপর এইরূপ প্রশ্ন করা যেতে পারে। এমন কি সম্ভাব্য, বিচার ও বোধমূলক যে-সব পরীক্ষার সম্বন্ধে ধারণা আছে যে উঁচু শ্রেণীগুলি ব্যতীত এগুলির প্রয়োগ সম্ভব নয়, সেই ধরনের প্রশ্নও যষ্ঠশ্রেণীর উপযোগী করে করা হয়েছে। শিক্ষাপদ্ধতির সংগে পরীক্ষার সংযোগ অতি ঘনিষ্ঠ। বর্তমানকালে শিক্ষাপদ্ধতির আমূল সংস্কারের সংগে পরীক্ষাপদ্ধতির সম্বন্ধেও মনোভাব পরিবর্তিত হচ্ছে। বর্তমানে ব্যক্তিকেন্দ্রিক পরীক্ষার পরিবর্তে নৈর্ব্যক্তিক পরীক্ষার দিকে মনোযোগ বেশি আকৃষ্ট হচ্ছে।

সাধারণ বিজ্ঞান—সপ্তম শ্রেণী

ক। বায়ু ১। নিম্নলিখিত উক্তিগুলির মধ্যে যে গুলি সত্য তার পাশের বন্ধনীতে ✓ ও যেগুলি মিথ্যা তার পাশের বন্ধনীতে × চিহ্ন দাও—

(ক) বায়ু একটি গ্যাসীয় মৌলিক পদার্থ। ()

- (ক) বায়ু একটি গ্যাসীয় মৌলিক পদার্থ। ()
- (খ) বায়ুর মধ্যে সামান্য পরিমাণ বিষাক্ত গ্যাস আছে। ()
- (গ) বায়ুর মধ্যে অক্সিজেনের পরিমাণই অধিক। ()
- (ঘ) বায়ুকে আমরা ওজন করতে পারিনা কারণ তার ওজন নেই। ()
- (ঙ) গাছ অক্সিজেনের সাহায্যে শ্বাসকর্ম চালায়। ()
- (চ) বায়ুর চাপ আছে। ()
- (ছ) বায়ুর চাপ মাপবার যন্ত্রকে থার্মোমিটার বলে। ()
- (জ) নাইট্রোজেন দহনকার্যে সহায়তা করে। ()
- (ঝ) উচ্চ পর্বতের ওপর বায়ুর চাপ হালকা। ()
- (ঞ) বায়ুর উপাদানের ৪/৫ অংশ অক্সিজেন। ()
- (ট) গরম বাতাস তাক্সা হয়ে ওপরে উঠে যায়। ()
- (ঠ) মরিচা পড়াকে দহন বলা যায় না। ()
- (ড) অক্সিজেনের মধ্যে আলো উজ্জ্বলভাবে জলে। ()

২। নিচের বাক্যগুলির শূন্যস্থানগুলি একেকটি যথাযোগ্য শব্দ বসিয়ে পূর্ণ কর—

- (ক) উচ্চ পর্বতে ওঠার সময়ে আরোহণকারীরা — নিয়ে ওঠে।
- (খ) ঘরের দেয়ালের ওপরের ঘলগুলির সাহায্যে ঘরের — বায়ু বেরিয়ে যায়।
- (গ) ঘরের জানালা-দরজা বন্ধ করে ঘরের মধ্যে আগুন জালিয়ে রাখা — র পক্ষে খারাপ।
- (ঘ) জলে ডোবা রোগীকে জল থেকে তুলে কৃত্রিম — চালাবার ব্যবস্থা করতে হয়।
- (ঙ) অক্সিজেনের অভাবে কোনো প্রাণী বা উদ্ভিদ — পারেনা।
- (চ) অক্সিজেন দাহ্য পদার্থকে — সাহায্য করে।
- (ছ) লোহাকে জল ও বায়ুর সংস্পর্শে অনেকক্ষণ রেখে দিলে — পড়ে।
- (জ) অক্সিজেন লোহার সংগে — হয়ে — তৈরি করে।

৩। নিচের প্রত্যেক প্রশ্নের উত্তরে কতকগুলি করে শব্দ দেওয়া হয়েছে। প্রত্যেক ক্ষেত্রে যে শব্দ ঠিক তার চারদিকে বৃত্ত একে দাও :—

- (ক) বায়ুর কোন অংশ আমাদের শ্বাসকার্যে সহায়তা করে ?
—নাইট্রোজেন, কার্বন ডাই-অক্সাইড, অক্সিজেন, হাইড্রোজেন।
- (খ) বায়ু কি প্রকারের পদার্থ ?
—তরল, কঠিন, গ্যাসীয়।
- (গ) বায়ুর প্রধান উপাদান কি ?
—হাইড্রোজেন, কার্বন ডাই/অক্সাইড, অক্সিজেন।
- (ঘ) বায়ুর উপাদানের পাঁচ ভাগের একভাগ কি ?
—নাইট্রোজেন, হাইড্রোজেন, হিলিয়াম, অক্সিজেন, কার্বন ডাই-অক্সাইড।

(ঙ) বায়ুমণ্ডলের গভীরতা কত ?

—২০০, ১০০, ৫০০, ৪০০ মাইল।

(চ) বায়ুমণ্ডলের ওপরের স্তরের নাম কি ?

—শান্তস্তর, ঠাণ্ডাস্তর, ক্ষুদ্রস্তর।

(ছ) আমাদের জীবনযাত্রার প্রধান অবলম্বন বায়ুমণ্ডলের কোন স্তর ?

শান্তস্তর, ঠাণ্ডাস্তর, ক্ষুদ্রস্তর।

৪। নিচের প্রত্যেক প্রশ্নের তিনটি করে উত্তর দেওয়া আছে। ঠিক উত্তরটির পাশের বন্ধনীতে ✓ চিহ্ন বসানো।

(ক) বায়ুশূন্য স্থানে সজীব পদার্থের শ্বাসকাঠি চলেনা, কারণ—

১। জলীয় বাষ্প নেই।

()

২। নাইট্রোজেন নেই।

()

৩। অক্সিজেন নেই।

()

(খ) রাত্রাঘরের বায়ু দূষিত হয় কারণ তাতে—

১। জলীয় বাষ্প থাকে।

()

২। অক্সিজেন থাকে।

()

৩। কয়লার দহনে উৎপন্ন নানাপ্রকার গ্যাস থাকে।

()

১। উপযুক্ত শব্দ বসিয়ে নিচের শূন্যস্থানগুলি পূর্ণ কর:—

(ক) ভূপৃষ্ঠের চারভাগের প্রায় — ভাগ জল।

(খ) জল — পদার্থ।

(গ) বরফ ও তুষার জলের — অবস্থা।

(ঘ) বিশাল সমুদ্রে জলের রং —।

(ঙ) উত্তাপে জল ফুটে — হয়।

(চ) জলের ওজন ও আয়তন আছে কিন্তু — নেই।

(ছ) জলের চাপ সবদিকে — বিস্তৃত হয়।

(জ) বিস্কৃত জল স্বাদহীন, —, — পদার্থ।

২। নিচের বাক্যগুলির মধ্যে যেগুলি সত্য তার পাশের বন্ধনীতে (✓) ও যেগুলি মিথ্যা তার পাশের বন্ধনীতে × চিহ্ন দাও।

(ক) জল কেবল উদ্ভিদ দিয়ে তৈরি।

()

(খ) রুষ্টির জল ভূগর্ভের অপ্রবেশ্য স্তরে প্রবেশ করে' কোথাও ছিদ্র পেলে প্রসবর্ণরূপে বেরিয়ে আসে।

()

(গ) পানীয় জল যে-কোনো উপায়েই সংগৃহীত হোক না কেন বিশোধন না করেও ব্যবহার করা চলে।

()

(ঘ) জলের অস্বর্গত কঠিন পদার্থের পাত্রের নিচে জমা হওয়াকে পরিস্রাবণ বলে।

()

(ঙ) জীবাণুযুক্ত জল ফুটিয়ে নিলে জীবাণুগুলি উত্তাপে মরে যায়।

()

(চ) ম্যালেরিয়া রোগ জলের দ্বারা সংক্রামিত হয়।

()

৩। নিচের প্রত্যেক বাক্যাংশের সম্পূরক কয়েকটি করে অংশ দেওয়া হয়েছে, যেটি ঠিক তার চারপাশে বৃত্ত এঁকে দাও:—

- (ক) মৃদু জলে— ডাল সেদ্ধ হয় না, সহজে ফেনা হয়, সাবান দিলে কাপড় পরিষ্কার হয় না।
- (খ) জলের খরতার কারণ— ক্যালসিয়াম ও ম্যাগনেসিয়াম ঘটিত লবণ, গন্ধক, পটাসিয়াম নাইট্রেট এর উপস্থিতি।
- (গ) জলের অস্থায়ী খরতা দূর করার জন্ত মিশাতে হয়—হুন, ম্যাগনেসিয়াম সালফেট, চূণ।
- (ঘ) জলের স্থায়ী খরতা দূর করার জন্ত মিশাতে হয়— চূণ, সূর্যের আলো, সোডিয়াম পারমিউট।
- (ঙ) কোনো কঠিন ও তরল পদার্থের মিশ্রণ থেকে সহজ পদার সাহায্যে উপাদান গুলো পৃথক করার নাম— আশ্রাবণ, পরিশ্রাবণ, পাতন, নির্বাঞ্জন।
- (চ) জলের ফ্রিটনাংক— 100° সেন্টিগ্রেড।
 100° ফারেনহাইট।
 100° রেমার।

গ। উদ্ভিদ বিদ্যা (মটর গাছ)

১। নিম্নলিখিত প্রত্যেক বাক্যাংশের তিনটি করে সম্পূরক দেওয়া আছে। ঠিকটির পাশের বহনীতে ✓ চিহ্ন দাও—

- (ক) বীজের যে দু'টি অংশ গাছের কাণ্ড ও মূল তৈরি করে তার নাম—
- ১। বীজপত্র ও জগমুকুল। ()
 - ২। জগমুকুল কক্ষমুকুল। ()
 - ৩। জগমূল ও জগমুকুল। ()

- (খ) মূলত্রাণ দিয়ে মূলের অগ্রভাগকে রক্ষা করা আবশ্যিক, কারণ—
- ১। অগ্রভাগ গাছের খাদ্য গ্রহণ করে। ()
 - ২। নরম মূলে শক্ত জিনিষের আঘাত লাগতে পারে। ()
 - ৩। গাছের প্রাণ মূলের অগ্রভাগে থাকে। ()

- (গ) গাছের বাসকার্য চলে—
- ১। কেবল দিনের বেলায়। ()
 - ২। কেবল রাত্রিতে। ()
 - ৩। দিনরাত্রি সব সময়ে। ()

২। নিচের বাক্য গুলির মধ্যে যেটি ঠিক তার পাশের বহনীতে ✓ ও যেটি ভুল তার পাশের পক্ষনীতে ✗ চিহ্ন দাও।

- (ক) মটর ফুলের সবচেয়ে ওপরের অংশের নাম বৃতি। ()
- (খ) মটর ফুলের কেবল মাত্র পুংকেশর থাকে। ()
- (গ) মটরবীজের গায়ে ছোট ছিদ্রটিকে ডিম্বকরূপ বলে।
- (ঘ) উপফুল একটি অসম্পূর্ণ ফুল।

৩। উপযুক্ত শব্দ দিয়ে নিচের শূন্য স্থান গুলি পূর্ণ কর—

- (ক) —এ শিশু উদ্ভিদের খাত্ত সঞ্চিত থাকে।
 (খ) গাছ—এর সাহায্যে খাত্ত প্রস্তুত করে।
 (গ) মটর গাছের পাতায় একাধিক—খাকার জন্ত তাকে— বলা হয়।
 (ঘ) গাছের শ্বাসকার্য — গ্যাসের সাহায্যে হয়ে থাকে।
 (ঙ) মটরগাছ বাতান থেকে শিকড়ের সাহায্যে— গ্যাস গ্রহণ করে' থাকে।
 (চ) মটরগাছের পাতার অগ্রভাগ —এ রূপান্তরিত হয়।
 (ছ) মটরগাছের প্রত্যেক পাতার দুইপাশে দু'টি করে— থাকে।

৪। নিচের প্রত্যেক প্রশ্নের তিনটি উত্তর দেওয়া হয়েছে। ঠিক উত্তরের চারদিকে বৃত্তধারা চিহ্নিত কর।

- (ক) রজনীগন্ধা অসম্পূর্ণ ফুল কেন?
 —এতে বৃতি — পুংকেশর — বোটা নেই।
 (খ) অক্সিজেন কিরূপ পদার্থ?
 —মৌলিক — যৌগিক — মিশ্র।

ঘ। উত্তরনির্বাচন

নির্দেশ :—বন্ধনীর মধ্যে থেকে উপযুক্ত শব্দ নিয়ে নিচের বাক্যগুলির শূন্যস্থান যথাযোগ্য ভাবে পূর্ণ কর।

(চাপমানষ, বায়ু নিকাশনযন্ত্র, বায়ু সংনমযন্ত্র, গর্ভমুণ্ড, ডিম্বক, বায়ু, জলে, অক্সিজেন, পুংস্তবক)

- ১। সাইকেল পাম্প করতে ব্যবহার করা হয়—।
 ২। জল তুলতে ব্যবহার করা হয় —।
 ৩। ফুলের তৃতীয় স্তবকে বলে।
 ৪। গর্ভকেশরের মাথায় থাকে —।
 ৫। ডিম্বকোষের ভেতরে থাকে —।
 ৬। পর্বতারোহণে — সংগে করে' নিয়ে যেতে হয় কারণ সেখানে — খুব পাংলা।
 ৭। অক্সিজেন — সামান্য দ্রবীভূত বলে মাছ শ্বাসকার্য চালায়।

ঙ। সজ্জীকরণ

নির্দেশ—বাঁদিকে স্তম্ভে যে শব্দগুলি দেওয়া হয়েছে ডানদিকের স্তম্ভে তাদের সম্পর্কিত শব্দ এলোমেলো ভাবে ছড়ানো আছে। ডানদিক থেকে যথাযোগ্য শব্দনির্বাচন করে' বাঁদিকের স্তম্ভের সম্পর্কিত শব্দের পাশে তার নম্বর লিখে দাও।

- | | |
|---------------------|---------------|
| ১। বাষ্পীয় এঞ্জিন— | অভিকর্ষ। |
| ২। নিউটন— | কয়লা। |
| ৩। এরোপ্লেন— | গ্যাস-কার্বন। |
| ৪। কয়লা— | ধাতু। |
| ৫। খনিজ তেল— | অমাবস্যা। |
| ৬। লোহা— | পুর্ণিমা |
| ৭। চন্দ্রগ্রহণ— | পেট্রল। |
| ৮। সূর্যগ্রহণ— | কেরোসিন। |

অষ্টম শ্রেণি

ক। সত্যমিথ্যা

নির্দেশ—নিচে যে কথাগুলি বলা হয়েছে তার মধ্যে কয়েকটি সত্য ও কয়েকটি মিথ্যা। সত্যগুলির পাশের

- বন্ধনীতে ✓ ও মিথ্যাগুলির পাশের বন্ধনীতে × চিহ্ন দাও।
- ১। সমুদ্র সমতলে বায়ুমণ্ডলের চাপ সর্বাপেক্ষা কম। ()
 - ২। কলিকাতা অপেক্ষা দার্জিলিংয়ে চাপমান যন্ত্রে পারদস্তম্ভের উচ্চতা বেশি। ()
 - ৩। ফার্টিন চাপমান যন্ত্রে জল ব্যবহার করা হয়। ()
 - ৪। অপরাজিতা একটি সম্পূর্ণ ফুল। ()
 - ৫। টিকটিকি দেয়ালে আটকাইয়া থাকে বায়ুর উর্ধ্বচাপের জন্ত। ()
 - ৬। ফুল যখন কুঁড়ি থাকে তখন পাপড়ির স্তবক উহাকে ঢাকিয়া রাখে। ()
 - ৭। অক্সিজেন নিজে জলে। ()
 - ৮। হীরক কাঁচ অপেক্ষা নরম পদার্থ। ()
 - ৯। আমরা প্রখাসের সহিত কার্বন ডাই-অক্সাইড গ্রহণ করি। ()

খ। শূন্যস্থান পূরণ

নির্দেশ—নিচের বাক্যগুলির শূন্যস্থান যথাযোগ্য শব্দ বসিয়ে পূর্ণ কর।

- ১। ঝড় উঠবার আগে চাপমান যন্ত্রে পারদ স্তম্ভ—যায়।
- ২। প্রাইমাস ষ্টোভের পাম্পটি দিয়ে ভেতরে বায়ুর চাপ—করা যায়।
- ৩। বায়ুচাপমান যন্ত্রের শূন্যস্থানকে বলে—
- ৪। যে-সব ফুলে—স্তবক থাকে তাকে—ফুল বলা হয়।
- ৫। পটেশিয়ম ক্লোরেটের সংগে—মিশিয়ে— দিলে অতি সহজেই অক্সিজেন পাওয়া যায়।
- ৬। অক্সিজেন জলে সহজে—হয়।

গ। উত্তর নির্বাচন

নির্দেশ—নিচের প্রত্যেক প্রশ্নের তিনটি করে উত্তর দেওয়া আছে, যে যে উত্তর ঠিক তার চারদিকে বৃত্ত এঁকে দাও।

- ১। ফুটবল পাম্প করতে কি যন্ত্রের দরকার হয়? বায়ুনিষ্কাশন যন্ত্র—বায়ু সংরক্ষণ যন্ত্র—সাইফন
- ২। চাপমান যন্ত্র কে আবিস্কার করেন? গ্যালিলিও—নিউটন—টরিসেলি।
- ৩। সাধারণ পাম্পে জল উঠে আসবার প্রধান কারণ কি?—শারীরিক বল—বায়ুমণ্ডলের চাপের ক্রিয়া—যন্ত্রের কার্যকারিতা।

ঘ। উত্তর মেলাও

নির্দেশ—নিচের বন্ধনীতে দেওয়া শব্দগুলির মধ্যে থেকে যথাযথভাবে নির্বাচন করে' পরবর্তী বাক্যগুলির শূন্যস্থান পূর্ণ কর।

(মূল, মুকুট, ক্ষুদ্রাঙ্গ, খ-দন্ত, পাকস্থলী, পেষকদন্ত, দো-আঁশ, এঁটেল, বেল, লোনা, কাকর, থার্মোমিটার, ভোল্টমিটার, পিতলের, মাটির, কাচের, পেপটোন, এমাইনো-এসিড, শর্করায়)

- ১। উচ্চতা মাপবার যন্ত্রের নাম—

- ২। গ্রীষ্মকালে—কনসিতে জল বেশ ঠাণ্ডা হয়
- ৩। যে মাটিতে বেশির ভাগ কাদা, অজৈব পদার্থ, অল্পবালি ও জল থাকে তাকে—মাটি বলে
- ৪। —মাটি ধানচাষের উপযোগী
- ৫। —মাটিতে নারিকেল ও সুপারি গাছ ভাল হয়
- ৬। দাঁতের যে অংশ মাড়ির ওপরে থাকে তাকে—বলে
- ৭। —এর সাহায্যে খাত টুকরো টুকরো করা যায়
- ৮। মুখবিবর থেকে খাত গ্রাসনালীর মধ্য দিয়ে—এ প্রবেশ করে
- ৯। পাকস্থলীয় পাচকরসে খেতসার—এ পরিণত হয়।

গ। শূণ্যস্থান পূরণ

নির্দেশ—যথাযথ শব্দবারা নিচের শূণ্যস্থান গুলি পূর্ণ কর।

- ১। খাতবস্ত্র মুখবিবর থেকে—এর মধ্য দিয়ে—এ প্রবেশ করে' পরিপাকক্রিয়া প্রায় সমাপ্ত করে।
ও খাতের প্রজীর্ণ অংশ—মধ্যে দিয়ে বের হয়ে যায়।
- ২। অনেক পদার্থকে খুব বেশি উত্তপ্ত করলে—হয়ে ওঠে ও—বিকীরণ করতে থাকে।
- ৩। রেললাইন পাতবার সময়ে দুইখানি রেলের মাঝে কিছু —রাখা হয়।
- ৪। তরল পদার্থের বাষ্পে পরিণত হওয়াকে—বলে।
- ৫। কঠিন ও তরল পদার্থ অপেক্ষা—তাপে বেশি প্রসারিত হয়।
- ৬। বোতলের মুখে কাঁচের ছিপি এঁটে গেলে খোলবার জন্ত একটু—করতে হয়।
- ৭। তরল পদার্থের সকল অংশ থেকে বাষ্পীভবন দ্রুতগতিতে হ'লে এই অবস্থাকে বলে—।
- ৮। বুদ্ধি, জ্ঞান, অহুভূতি ও বিচার শক্তির কেন্দ্র—।
- ৯। স্বপ্না কাণ্ড নিজেই যে কাজ করতে বাধ্য হয় তা —।
- ১০। —সর্বদা নেত্রগোলক ভিজিয়ে রাখে।
- ১১। মধ্যকর্ণ ও মুখগহবর—দ্বারা সংযুক্ত।
- ১২। নাসারক্ত থেকে মুখগহবর পর্যন্ত বিস্তৃত ত্রিকোণ গহবরের নাম—
- ১৩। খাতের স্বাদগ্রহণে সাহায্য করে—

খ। উত্তরনির্বাচন

নির্দেশ—নিচের প্রত্যেকটি প্রশ্নের তিনটি করে' উত্তর দেওয়া আছে। যথাযথ উত্তরের পাশের বন্ধনীতে ✓ চিহ্ন দাও

- ১। অমিষ জাতীয় খাতের কাজ কি
—করপূরণ ও পুষ্টি সাধন
—তাপ ও কর্মশক্তি উৎপাদন
—শরীরের রক্তকে তরল রাখা

()
()
()

- ২। লবণজাতীয় খাদ্য কি ? ()
 —চাল, ডাল, আলু ()
 —তৈল, মাখন, নারিকেল ()
 ৩। সুষম খাদ্য কাকে বলে ? ()
 —যা মুখরোচক ()
 —নিদিষ্ট ক্যালরির পরিমাণ তাপ দেয় ও যাতে ছ'টি ঋণোপাদানই বর্তমান থাকে ()
 —যা বেশি মূল্যবান। ()
 ৪। পাকস্থলীর পাচকরসের প্রধান উপাদান কি ? ()
 —লাইপেজ, ত্র্যমাইলেজ, ট্রিপসিন ()
 পেপাসিন, হাইড্রোক্লোরিক এসিড ও রেনিন ()
 মন্টেজ, ইনভার্টজ, ইরেপসিন ()
 ৫। অগ্ন্যাশয়ে কি প্রস্তুত হয় ? ()
 —আম্লিক রস ()
 ক্রোম রস ()
 —ইনসুলিন ()

ঙ। সাদৃশ্যানুসরণ

নির্দেশ—প্রত্যেক প্রশ্নে তিনটি করে' শব্দ দেওয়া আছে। তার মধ্যে প্রথম ও দ্বিতীয়ের যে সম্পর্ক তৃতীয়ের
 সংগে অতুল্য সম্পর্কযুক্ত শব্দ চতুর্থ স্থলে বসায়।

- ১। রোন তন্ত্র : ফুসফুস : পরিপাক তন্ত্র :
 ২। যকৃত : প্রোটিনসমতা : চর্ম :
 ৩। অস্থিমূখী নার্ভ : মস্তিষ্ক : বহিমূখী নার্ভ :
 ৪। এঞ্জিন : কয়লা : মানবদেহ :
 ৫। কঠিন : গলনাংক : তরল :
 ৬। লবণ : পটাসিয়ম : সালফেট : এসিড :
 ৭। দর্পণ : প্রতিফলন : লেন্স :
 ৮। অমাবস্যা : সূর্যগ্রহণ : পূর্ণিমা :

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